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OPERATIONS

OF THE

UNITED STATES MARINE-HOSPITAL SERVICE.

1901.

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ANNUAL REPORT

OF THE

SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT TO THE SECRETARY.

Treasury Department,
Office of the Supervising Surgeon-General
Marine-Hospital Service,
Washington, D. C., November 1, 1901.

Hon. L. J. Gage,
Secretary of the Treasury.

Sir: I have the honor to submit the following report of transactions of the Marine-Hospital Service of the United States for the fiscal year ended June 30, 1901, the same being the thirtieth annual report of the Service and the one hundred and third year of its existence.

While the major portion of this report includes only those transactions prior to July 1, 1901, the officer in charge of the division of insular and foreign quarantine and immigration has embodied in his report supplemental reports from certain stations showing the work to September 15, 1901, and both in his report and in the report of the domestic quarantine division the operations of the Service, in several instances where it was deemed necessary to complete the narration, are reported up to the present date.

Full reports of the Service operations, in detail, by officers in charge of the different divisions of the Bureau follow, but I will give here a review of the work of the Service since November 1, 1900, in brief.

PERSONNEL.

The commissioned corps at the close of the fiscal year consisted of 106 officers, including the Surgeon-General, 29 surgeons, 23 passed assistant surgeons, and 53 assistant surgeons. Noncommissioned officers—188 acting assistant surgeons, which includes all officers of this grade in Cuba and the insular possessions, and 49 hospital stewards. Hospital and quarantine attendants, 646. One officer, Asst. Surg. W. R. Edson, resigned September 22, 1900.

ACCOUNTS.

The balance of the marine-hospital fund available at the commencement of the fiscal year was $773,313.42. The expenditures on account of the Marine-Hospital Service were $956,805.46. The amount available July 1, 1901, was $726,752.74. The expenditures from this fund have been larger than usual on account of the growth of the Service and the increased relief furnished, and because Congress purposely excluded marine hospitals from participation in the annual appropriations for repairs, furniture, fuel, light, and water, and from special appropriations for improvements, these items being payable from this fund.

The balance of the appropriation "Preventing the spread of epidemic diseases," available July 1, 1900, was $468,581.96; the appropriation act of March 3, 1901, $500,000; and repayments, $6,233.26, making a total available during the year of $974,815.22. The expenditures were $175,253.41, and the balance July 1, 1901, was $799,561.81.

MARINE HOSPITALS AND RELIEF.

Fifty-six thousand three hundred and eighty-one sick and disabled seamen of the merchant marine were treated during the fiscal year, being 2,026 in excess of the number treated in previous years. There were 13,341 treated in hospital, the remainder being treated as dispensary patients.

There were 1,369 important surgical operations performed requiring the use of anæsthetics.

The Service owns and operates 21 marine hospitals, and operates two additional hospitals in leased buildings (New York, N. Y., and Dutch Harbor, Alaska). There are besides 115 relief stations where patients receive hospital or dispensary treatment. Three relief stations of the second class have been established during the year at the ports of Honolulu, H. I., San Juan, P. R., and Ponce, P. R., and three others at the close of the last fiscal year.

HOSPITALS NEEDED AT NEW YORK AND BUFFALO.

I have to renew my recommendation that the hospital and grounds at Stapleton, N. Y., now rented for the care of patients of the Service, be purchased by the Government for this Service, and that Congress be requested to appropriate a sum sufficient for this purpose.

A marine hospital is also needed at the port of Buffalo, N. Y., and I have to recommend that Congress be requested also to make appropriation for purchase of site and erection of a hospital building at that port.

SANATORIUM FOR CONSUMPTIVES, FORT STANTON, N. MEX.

The equipment of this station is now nearing completion, and the repair of the buildings and the improvement of the reservation have proceeded as rapidly as possible.

Tuberculous patients admitted to hospital at other relief stations have been transferred as promptly as their condition would permit, with resulting benefit to the individual transferred and diminution of the risk of infecting other beneficiaries of the Service. The station has been supplied with modern sterilizing apparatus with a view to preventing the infection of the sanatorium itself.

There were 105 patients admitted to the sanatorium during the year. Eighteen were discharged cured, 42 improved, 3 not improved, and 17 died.

PURVEYING DEPOT, NEW YORK.

The marine hospitals and quarantine stations in the United States, Hawaii, Cuba, Porto Rico, and the Philippines receive their supplies through the purveying depot. The Immigration and Revenue-Cutter services, and Coast and Geodetic Survey, also receive some of their supplies through the depot. Nine hundred and seventy-three requisitions were filled during the year.

AID TO OTHER SERVICES.

Aid was extended to other branches of the Government service during the fiscal year as follows:

To the Life-Saving Service, in the physical examination of 1,445 surfmen, of whom 81 were rejected, and the examination of 420 claims of surfmen for the benefits provided by the act of May 4, 1882; to the Revenue-Cutter Service, in the examination of 932 applicants for enlistment, of whom 155 were rejected; to the Steamboat-Inspection Service, in the examination of 1,644 applicants for pilots' licenses, of whom 94 were rejected; to the Coast Survey and Light-House Establishment, in the examination of 40 applicants for enlistment, of whom 11 were rejected; and to the Immigration Service, in the medical inspection of 472,111 immigrants, the inspection of immigrants being conducted by officers of the Service at 29 ports of the United States.

SANITARY REPORTS AND STATISTICS.

The Public Health Reports, which are intended for collectors of customs, health officers, and other sanitarians, have now a circulation of 2,250. Reports were received during the year from 1,447 cities and towns of the United States, with an aggregate population of 20,929,738, and from 110 of the principal foreign cities.

In addition to publishing the mortality tables and tables of epidemic diseases as reported from the various cities and towns of the world, reports are published from the officers of the Service and consular officers relative to the health conditions of the countries in which they are stationed. The Public Health Reports for the calendar year ended December 31, 1900, contained 3,183 pages, and were bound in two volumes.

INSULAR AND FOREIGN QUARANTINE.

During the year the Marine-Hospital Service has conducted maritime quarantine in Cuba, Porto Rico, Hawaii, and the Philippines.

Floating disinfecting plants are now stationed at Havana, Matanzas, Santiago, and Cienfuegos, and a plant is now in course of construction at the port of Havana for use at Nuevitas. A floating plant has been stationed at San Juan, P. R., and another plant is now completed for use at the port of Ponce, P. R.

Disinfecting machinery has been installed on the channel wharf at Honolulu, Hawaii, and extensive repairs are under way at the quarantine station at Mauliola Island, in the harbor of Honolulu. Inspection stations are also operated at Hilo, Kahului, and Kihei. Repairs and improvements have been made at Mariveles Quarantine Station, near Manila, P. I., including the construction of a wharf, with disinfecting machinery installed thereon, rendering this one of the best equipped quarantine stations under the control of the Service.

Medical officers have been on duty at the ports of London, Liverpool, and Naples, in Europe; also at Quebec, Canada, for inspection of aliens coming to the United States.

The inspection of the seven fruit ports of Central and South

America, namely, Belize, British Honduras; Livingston, Guatemala; Puerto Cortez, Honduras; La Ceiba, Honduras; Bluefields, Nicaragua; Port Limon, Costa Rica, and Bocas del Toro, Colombia, has been reestablished for the purpose of inspecting all vessels bound from said ports to ports in the United States, with a view to facilitating the transportation of fruit without endangering the public health.

Following is a list showing the number of officers at national quarantine stations in our insular possessions:

	Commissioned.	Acting assistant surgeons.	Hospital stewards.
Hawaii	3	3	1
Porto Rico	2	8	1
Philippines	4	1	1
Cuba	5	29	2

Officers have also been on duty at the ports of Vera Cruz, Progreso, and Tampico, Mexico; Rio Janeiro, Brazil; Hongkong, China; Yokohama and Kobe, Japan, for the inspection and certification of vessels and passengers leaving for the United States.

DOMESTIC QUARANTINE.

There were during the year 4,729 vessels inspected and 366 vessels disinfected at national quarantine stations. At the close of the fiscal year the Marine-Hospital Service owned 13 complete maritime quarantine stations and controlled 21 stations where inspection of incoming vessels is conducted by officers of the Service.

FLORIDA QUARANTINE TRANSFERRED TO THE GOVERNMENT.

August 1, 1901, the State authorities of Florida transferred their quarantine stations and functions to the Marine-Hospital Service. They were accepted under the provision of section 8 of the act of Congress approved February 15, 1893, in like manner as the quarantine at Savannah, Ga., was accepted in 1900.

One station, Mullet Key, was purchased under act of Congress June 6, 1900. The other stations were leased for a period of three years. Of the stations thus acquired, 6 are equipped for disinfection, and are located at Fernandina, Miami, Key West, Mullet Key, Carabelle, and Pensacola. The other stations, 5 in all, are for inspection only. The Department has agreed to recommend to Congress legislation necessary for the purchase of the stations, and estimates have accordingly been included in the Book of Estimates for 1903.

In the preliminary measures looking to the ultimate transfer of the Florida quarantines to the National Government credit is due to Surg. A. H. Glennan, who acted as the representative of the Bureau and of the Department, both in bringing about an *entente cordiale* with the Florida State health authorities and at Tallahassee in making known the requirements of the Department with regard to the necessary legislation to be enacted by the legislature of Florida.

TEXAS-MEXICAN BORDER QUARANTINE.

On account of the continued prevalence of yellow fever and smallpox in the Republic of Mexico, the land quarantine at El Paso, Eagle

Pass, and Laredo, Tex., have been maintained as in previous years, and the officers stationed there have exercised supervision over the entry into Texas of all persons from Mexico, and have cooperated in this work with the United States Immigration Service and with the State health authorities. There were 1,104 trains inspected, carrying 77,074 passengers, 186 of whom were detained for observation.

SMALLPOX.

During the year smallpox has been reported in every State and Territory of the Union, with the exception of Arizona, from which no reports have been received.

The number of cases reported for the six months ended December 31, 1900, was 7,796, with 137 deaths, a mortality of 1.75 per cent.

For the six months ended June 30, 1901, 30,710 cases were reported with 552 deaths, a mortality of 1.79 per cent.

For the whole year the number of cases was 38,506 and deaths 689, mortality 1.77 per cent, as compared with 15,053 cases and 735 deaths during the year ended June 30, 1900, a mortality of 4.8 per cent.

Thus it is seen that while more than twice as many cases have been reported during the year just ended, the mortality has been less than half what it was in the preceding year. This is probably to be explained by the fact that cases as well as deaths were more fully reported during the year just ended, while in the preceding year, although most of the deaths from smallpox were reported, there is no doubt that a great many cases of the disease, for various reasons, were not reported. According to this explanation the lower figures, 1.77, are nearer the correct mortality, and even this may be a little excessive as deaths are more apt to be reported than cases.

As in previous years the Marine-Hospital Service has rendered assistance to State and local boards of health by furnishing advice and detailing officers to make investigations and assist the State authorities in putting into execution proper regulations. The detail of officers made last year to Cape Nome and Dutch Harbor, under authority of an Executive order, was renewed this year, and in the spring of 1901 an officer was sent to make a careful investigation of smallpox conditions in southeastern Alaska. His report showed a widespread dissemination of smallpox in that region.

In view of the unusual prevalence of smallpox throughout the United States, and to aid in a way the suppression of it, two pamphlets relating to the diagnosis, prevention, and suppression of the disease, which were prepared by officers of the Service, were mailed to the health officers or other interested persons in towns where smallpox was reported to be present. In this manner these pamphlets were sent to 2,100 towns, and into every State and Territory of the United States, except one.

PLAGUE IN SAN FRANCISCO.

The existence of bubonic plague in San Francisco, which was first officially reported on March 7, 1900, and of which mention was made in my last report, was conclusively confirmed by a commission appointed by the Department, consisting of three bacteriologists of the highest reputation, and with no previous connection with Government service, who reached San Francisco in the latter part of January, 1901, and, after an exhaustive investigation, rendered a report so conclusive in its nature as to result in measures being taken to cleanse

Chinatown, where the plague existed. In accordance with an agreement between the Department and the authorities of the State of California and city of San Francisco, the work of inspection, isolation, and disinfection in Chinatown, San Francisco, was carried on by a corps of physicians and employees of the State and city under the advice and direction of a surgeon and a corps of assistants of the Marine-Hospital Service. This work was completed on June 21, at which time 1,180 houses containing 14,117 rooms, had been disinfected at a cost of about $75,000, the burden of expense falling upon the local and State authorities, the Treasury Department paying only the salaries and incidental expenses of its own officers. Since the completion of the work, an organization has been maintained for the purpose of making examinations of the sick and dead in Chinatown, and assisting, when requested, in the disinfection of premises where cases are found. Fifty cases have been reported from March 6, 1900, to the present time, 32 of which occurred since October 14, 1900.

The difficulties connected with the work in Chinatown are set forth in the detailed account of transactions published in the report from the division of domestic quarantine.

YELLOW FEVER.

There has been no yellow fever in the United States since my last report, and, with the exception of a few cases that were reported in Natchez in November of last year, there has been no yellow fever in the United States since the fall of 1899. Reports have been received of the existence of yellow fever in Brazil, Colombia, Costa Rica, Cuba, France (on steamship at Havre), Haiti, Jamaica, Mexico, Salvador, San Domingo, and west Africa. Brazil, Cuba, and Mexico furnished a very large majority of the cases. In Cuba, from July 1 to December 31, 1900, there were 1,279 cases, with 298 deaths, a mortality of 23.3 per cent; from January 1 to June 30, 1901, 114 cases, with 30 deaths, a mortality of 34.2 per cent.

The proposition to bring about an international agreement of the American Republics for the sanitation of certain seacoast cities, with a view to the elimination of yellow fever therefrom, which was referred to in my last two reports, has been generally so favorably received that, by invitation, a plan to effect such an agreement was submitted by myself to the chairman of the United States delegation for presentation to the conference of American States now in session in the City of Mexico.

YELLOW-FEVER INSTITUTE.

Recognizing the importance of arriving at full and definite conclusions in regard to all questions concerning yellow fever, its etiology, epidemic history, method of spread, and the influence that this will have on quarantine and quarantine regulations, there has been established within the Service (with Department approval) a yellow-fever institute, the object of which organization will be "to collect all facts concerning yellow fever; to designate the specific lines of investigation to be made, and to make them."

The membership of the institute will consist of officers of the Marine-Hospital Service, and others specially qualified, who will become members by invitation. A full account of this institute is contained in the report of the division of domestic quarantine.

LEPROSY COMMISSION.

On December 15, 1899, three officers of the Service were designated as a commission to put into execution the provisions of the act of Congress, approved March 2, 1899, providing for an investigation of leprosy in the United States. This commission has nearly completed its labors, having made exhaustive inquiry in every State, county, city, town, and hamlet in the United States, and will render its report for submission to Congress on December 1 next.

HYGIENIC LABORATORY.

One hundred thousand doses of the vaccine for bubonic plague have been prepared in the hygienic laboratory. This vaccine, known as Haffkine prophylactic, is an efficient preventive against this disease. It was sent to the Philippine Islands, to Hawaii, and to all our ports on the Pacific coast. Horses were treated in order to obtain a curative serum for yellow fever, plague, typhoid fever, and pneumonia.

Studies were made with the bacillus causing bubonic plague in order to determine its viability under all possible conditions. The results of these experiments, which appeared in a laboratory bulletin (No. 4) entitled "The viability of the bacillus pestis," has a direct practical bearing upon quarantine practice.

Experiments were also made with the sulphur dioxide and formaldehyde gas, in order to determine their value as disinfecting agents. Laboratory bulletins were issued on both of these subjects.

NEW LABORATORY BUILDING.

The last Congress appropriated the sum of $35,000 for a new laboratory for "the investigation of infectious and contagious diseases and matters pertaining to the public health." The preliminary plans for the construction of the building are now being drawn. The laboratory has long outgrown its present quarters, and the new building will present the possibilities of more work and an enlarged scope, the need of which has been felt.

LEGISLATION NEEDED.

I beg leave to invite attention to the act of Congress heretofore quoted, approved March 3, 1901, making appropriation for a new laboratory building and declaring it to be "for the investigation of infectious and contagious diseases and matters pertaining to the public health." The terms of this act, together with the enforcement of the national quarantine laws, and other duties imposed upon the Marine-Hospital Service relating to the public health, make necessary, in my opinion, some legislation by Congress looking to the increased efficiency of the Marine-Hospital Service as a public-health service. It is my intention, at an early date, to prepare a measure of this character for your approval and submission to Congress.

I have the honor to remain, respectfully,

WALTER WYMAN,
Surgeon-General Marine-Hospital Service.

DIVISION OF PERSONNEL AND ACCOUNTS.

REPORT OF THE DIVISION OF PERSONNEL AND ACCOUNTS.

By George Purviance.

Surgeon, U. S. Marine-Hospital Service, in Charge.

COMMISSIONED MEDICAL CORPS OF THE SERVICE.

At the beginning of the fiscal year, July 1, 1900, there were 107 commissioned officers in the service, and no additional officers were commissioned during the year.

The corps lost 1 officer, Asst. Surg. W. R. Edson, who resigned September 22, 1900.

Two assistant surgeons were promoted to the grade of passed assistant surgeon.

The corps consists at the close of the fiscal year of 106 commissioned officers, as follows:

Supervising Surgeon-General	1
Surgeons	29
Passed assistant surgeons	23
Assistant surgeons	53
Total	106

BOARDS CONVENED.

Two boards have been convened for the examination of officers for promotion from the grade of assistant surgeon to passed assistant surgeon, and all officers ordered to examination for promotion have passed successful examinations.

Two boards were convened to make physical examination of applicants for appointment to position of cadetship in the Revenue-Cutter Service (boards were convened May 20 and June 7, 1901).

One board was convened to make physical examination of Second Assistant Engineer R. F. Halpin, Revenue-Cutter Service, February 5, 1901.

One board was convened to consider plans relative to establishment of a quarantine station at Mullet Key, Florida, November 17, 1900.

Board convened in New York (purveying depot) for revision of supply table, October 24, 1900.

Surgeon Austin was detailed as chairman of a board to be convened in Philadelphia, Pa., from time to time, for the purpose of reexamining such rejected immigrants as should appeal to it, March 28, 1901.

NONCOMMISSIONED OFFICERS.

ACTING ASSISTANT SURGEONS.

There were on duty at the beginning of the fiscal year 119 acting assistant surgeons and 43 temporary acting assistant surgeons, making a total of 162. During the year 4 acting assistant surgeons have died, 6 resigned, and 14 have been appointed. One hundred and thirty-seven temporary acting assistant surgeons have been appointed and 115 separated from the service by limitation of appointment and resignation.

The total number in the service at the close of the fiscal year is 188.

All temporary acting assistant surgeons on foreign and domestic quarantine and epidemic duty are included in the above statement.

HOSPITAL STEWARDS.

The total number of hospital stewards at the beginning of the fiscal year was 44, divided as follows:

Hospital steward and chemist	2
Hospital steward and assistant chemist	1
Hospital steward, chemist, and special disbursing agent	1
Senior hospital stewards	23
Junior hospital stewards	17

One senior hospital steward died, 1 senior hospital steward was promoted to the grade of hospital steward and chemist, 1 junior hospital steward resigned and 1 was promoted to be hospital steward and disbursing agent, and 4 junior hospital stewards were promoted to the grade of senior hospital steward.

Five eligibles were certified by the Civil Service Commission and appointed junior hospital stewards; and 1 senior hospital steward was reinstated upon certification of the Civil Service Commission.

The total number of hospital stewards of the three grades at the close of the year is 49.

HOSPITAL AND QUARANTINE ATTENDANTS.

There were at the beginning of the fiscal year 547 attendants; 1,038 have been appointed and 970 have been separated from the service by reason of resignation, death, desertion, and removal for cause. The following tables exhibit the transactions of the division as regards these employees:

Branch of service in which employed.	In service July 1, 1900.	Appointed during year.	Separated from service.	In service June 30, 1901.
Marine-Hospital Service	397	514	497	444
Quarantine	150	205	189	166
Epidemic	31	289	284	36
Total	578	1,038	970	646

The number in the service at the close of the year is 646, exclusive of those employed in island possessions and Cuba, which are accounted for as follows:

	In service July 1, 1900.	Appointed during year.	Separated from service.	In service June 30, 1901.
Hawaii	2	36	23	15
Porto Rico	8	20	10	18
Philippine Islands	12	73	47	38
Cuba	129	177	199	107

SPECIAL DETAILS AND APPOINTMENTS OF COMMISSIONED AND NON-COMMISSIONED OFFICERS, CHRONOLOGICALLY ARRANGED.

Nine temporary acting assistant surgeons were appointed July 1, 1900, for duty at various ports in Mississippi, for the purpose of obtaining daily information as to the health of their respective localities, and for the further purpose of procuring immediate reports of any suspected cases of yellow fever. Their services were dispensed with September 30, 1900.

Surg. A. H. Glennan was detailed chief quarantine officer of the island of Cuba, relieving Surg. H. R. Carter July 6, 1900.

P. A. Surg. A. R. Thomas, on duty in the office of the United States consul at London, England, was, on August 28, 1900, ordered to proceed to Glasgow, Scotland, to make special investigations on plague. On January 15, 1901, he was ordered to Shields, England, for the same purpose.

Surg. D. A. Carmichael was detailed as chief quarantine officer of the Territory of Hawaii August 31, 1900.

Asst. Surg. C. H. Lavinder was detailed as chief quarantine officer of the island of Porto Rico August 31, 1900, and continued to act as such until relieved by Asst. Surg. H. S. Mathewson, who was, under orders of October 9, 1900, detailed as chief quarantine officer of said island.

Asst. Surg. J. F. Anderson was relieved from duty in the office of the United States consul at Vienna, Austria September 1, 1900, and assigned to duty in the offices of the United States consuls at London and Liverpool, England, and on January 5, 1901, he was, upon the request of the Commissioner-General of Immigration and approval of the Secretary of the Treasury, assigned to duty as medical inspector of immigrants at Liverpool, England. He was relieved from duty as such medical inspector by Bureau order of August 13, 1901, and ordered to the United States for duty.

Asst. Surg. J. W. Kerr was assigned to duty at Hongkong, China, September 1, 1900.

Surg. J. J. Kinyoun was directed to proceed to Victoria, British Columbia, September 7, 1901, for the purpose of investigating the cause of vessels from that port carrying persons and crews who suffered from smallpox. As a result of his observations he submitted the nomination of two resident physicians for temporary employment at the ports of Nanaimo and Chemainus, whose services were discontinued in March, 1901.

P. A. Surg. C. P. Wertenbaker was, on September 10, 1900, directed to proceed to Galveston, Tex., for the purpose of rendering all possible assistance toward the relief of sufferers from the flood. A hospital steward was also sent from New Orleans to assist the medical officer.

Asst. Surg. D. H. Currie was detailed to take charge of the laboratory exhibit at Indianapolis, Ind., October 12, 1900.

P. A. Surg. J. A. Nydegger was relieved from duty at Manila, P. I., October 31, 1900, and ordered home on account of sickness. Two additional medical officers were assigned to duty in the Philippine Islands during the year.

P. A. Surg. J. B. Stoner was relieved from immigration duty at Quebec, Canada, on November 20, 1900.

Surg. H. W. Austin was detailed as medical officer in command of the Delaware Bay and River quarantine stations, December 5, 1900.

Surg. J. H. White was ordered to the Pacific coast as inspector. Upon his arrival in San Francisco he was placed in charge of special epidemic duty in connection with the bubonic plague which existed in that locality, December 26, 1900.

SPECIAL COMMISSION APPOINTED FOR THE INVESTIGATION OF THE PLAGUE SITUATION IN SAN FRANCISCO.

Profs. Simon Flexner, of the University of Pennsylvania; L. F. Barker, of the University of Chicago, and F. G. Novy, of the University of Ann Arbor, Mich., were appointed special commissioners for duty in San Francisco in connection with the suppression of bubonic plague, and on March 28, 1901, Prof. J. M. Flint, of the University of Chicago, was appointed temporary acting assistant surgeon for epidemic duty in San Francisco under direction of Surg. J. H. White. Seven commissioned medical officers were also ordered to San Francisco to assist Surgeon White.

OTHER DETAILS.

Seven temporary acting assistant surgeons were appointed March 20, 1901, for duty in the Central and South American fruit ports.

P. A. Surg. J. M. Eager was assigned to duty in the United States consulate at Naples, Italy, March 25, 1901, relieving Asst. Surg. V. G. Heiser.

P. A. Surg. J. B. Greene was relieved from duty in the office of the United States consul at Berlin, Germany, on April 5, 1901.

P. A. Surg. L. E. Cofer was detailed as chief quarantine officer of the Territory of Hawaii, relieving Surg. D. A. Carmichael, April 6, 1901.

Asst. Surg. S. B. Grubbs was relieved from duty in the office of the United States consul at Paris, France, April 10, 1901.

Surg. A. H. Glennan was ordered to Tallahassee, Fla., on April 22, 1901, for the purpose of conferring with local quarantine officers relative to a consolidation of the State, local, and national quarantines.

P. A. Surg. H. S. Mathewson and Asst. Surg. W. W. King were, on April 24, 1901, detailed to inspect the port of Guayanilla, P. R., looking to the establishment of a quarantine station at that port.

Asst. Surg. V. G. Heiser was, upon the request of the Commissioner-General of Immigration, and approval of the Secretary of the Treasury, on May 1, 1901, assigned to duty as medical inspector of immigrants at Quebec, Canada.

Surg. J. J. Kinyoun was ordered to Yokohama, Japan, and Hongkong, China, as inspector, June 28, 1901.

OFFICERS DETAILED TO AID STATE AND LOCAL AUTHORITIES IN SUPPRESSION OF SMALLPOX.

The following-named officers were detailed at various times during the year, upon requests of State and local health officers, to investigate and diagnose certain cases believed to be smallpox, viz:

Surg. W. P. McIntosh, Georgia and Tennessee.
Surg. T. B. Perry, West Virginia.
P. A. Surg. C. P. Wertenbaker, Arkansas.
P. A. Surg. W. G. Stimpson, Colorado, Oklahoma, and Indian Territory.
Asst. Surg. H. B. Parker, Mississippi and Louisiana.
Asst. Surg. W. C. Billings, West Virginia.
Asst. Surg. W. C. Hobdy, Georgia.
Asst. Surg. C. Fox, Sitka and Juneau, Alaska.

For further particulars in regard to the above-mentioned orders and details reference is made to the report of the officers in charge of the domestic and foreign quarantine divisions.

OFFICERS DETAILED TO REPRESENT THE SERVICE AT MEETINGS OF MEDICAL AND PUBLIC HEALTH ASSOCIATIONS.

The following-named officers have been detailed to represent the Service at meetings of medical and public-health associations:

Surg. A. H. Glennan, Third Pan-American Congress at Habana, Cuba, February 4–8, 1901.

Surg. R. M. Woodward, American Public Health Association at Indianapolis, Ind., October 22–26, 1900.

Surg. G. T. Vaughan, Association Military Surgeons of the United States at St. Paul, Minn., May 30, 1901; American Medical Association at St. Paul, Minn., June 4, 1901.

P. A. Surg. C. P. Wertenbaker, Texas Medical Association at Galveston, Tex., April 22, 1901; Association of Military Surgeons of the United States at St. Paul, Minn., May 30, 1901; American Medical Association at St. Paul, Minn., June 4, 1901.

P. A. Surg. M. J. Rosenau, thirteenth session of the International Congress of Medicine held at Paris, France, August 2–9, 1900.

P. A. Surg. C. H. Gardner, Washington State Medical Society, Seattle, Wash., June 18–20, 1901.

Asst. Surg. S. B. Grubbs, fourth session of International Congress of Applied Chemistry at Paris, France, July 23–31, 1900.

REPORT ON MEETING OF ASSOCIATION OF MILITARY SURGEONS AND MEETING OF AMERICAN MEDICAL ASSOCIATION, ST. PAUL, MINN., MAY 30 AND JUNE 4, RESPECTIVELY.

By Surg. G. T. VAUGHAN.

WASHINGTON, D. C., *July 20, 1901.*

SIR: In accordance with Bureau letters of May 27, 1901, detailing me as a delegate to the Association of Military Surgeons of the United States and to the American Medical Association at St. Paul, Minn., May 30 and June 4, respectively, I have the honor to make the following report:

ASSOCIATION OF MILITARY SURGEONS.

I did not reach St. Paul in time to attend the first day's exercises. The second day, May 31, an interesting paper entitled "The effect of abolishing the canteen in the Army" was read by Dr. Lewis Seaman, late major and surgeon, U. S. Volunteers, in which he quoted reports to show that the effect of abolishing the canteen had been to increase drunkenness, venereal diseases, and generally to injure the condition of the soldier. After discussion a committee was appointed to confer with the legislative committee of the American Medical Association for the purpose of inducing Congress to repeal the objectionable law.

In the afternoon papers were read and discussed by Surg. George T. Vaughan, U. S. Marine-Hospital Service, and Prof. Christian Fenger, of Chicago (by invitation). In the evening a banquet was given at the Aberdeen Hotel.

On the third day of the session (June 1) Major Hoff, U. S. Army, presented for examination the improved medical and surgical chests for field service, and Lieutenant Arnold, N. G. P., read a paper on "A tent with detachable sides." The nominating committee then made its report, which was accepted, and the following officers were elected for the next year: President, Maj. J. V. Hoff; first vice-president, General Blood, of the Massachusetts militia; second vice-president, Gen. Walter Wyman, U. S. Marine-Hospital Service; secretary, Maj. James E. Pilcher, U. S. Army (retired).

Time and place of the next meeting to be decided by the executive committee. Adjourned at 12 m. sine die.

AMERICAN MEDICAL ASSOCIATION.

On Monday, June 3, I registered as a delegate to the American Medical Association and visited the State University at Minneapolis, with its 3,400 students. In the evening I attended, as a representative of the Service, a meeting of the reorganization committee, the object of which was to make important changes in the constitution and by-laws of the association, the most important change being the appointment of a house of delegates, not to exceed 150 members at present, whose duty shall be to manage the financial and political business of the association, leaving the other members free to devote their time to the scientific proceedings. In the evening I attended unofficially a meeting of the Association of American Medical Colleges.

June 4, at 10 a. m., the association was formally convened in the Metropolitan Theater. President C. A. L. Reed made his address, the various officers of sections made their reports, and the nominating committee was organized, on which I was placed to represent the Service.

In the afternoon I attended for a short time the surgical section and heard a paper on "Appendicitis," by Dr. A. J. Ochsner, and one on the "Surgery of the spinal cord," by Dr. Andrew McCosh. Then I had to attend a meeting of the committee on reorganization with the executive committee, for the purpose of discussing the proposed changes in the constitution and hearing objections and criticisms. After a long and at times warm discussion the new constitution and by-laws were adopted without material change and were prepared for presentation to the association at the general meeting next day.

June 5.—After attending for a short time the surgical section I went to the general meeting at 11 a. m., in the Opera House and heard the address on surgery by Dr. John A. Wyeth. The new constitution and by-laws were then adopted without dissent. Dr. Seaman's resolution on the canteen was brought up, discussed, and referred to the committee on legislation.

In the afternoon I attended the surgical section until 4 p. m., when the nominating committee met and nominated, after a rather warm discussion, the officers for the next year, president Dr. John A. Wyeth, of New York.

June 6.—I attended the surgical section and the general meeting at which the address on medicine was delivered by Dr. N. S. Davis, jr. Miss Susan B. Anthony and the Rev. Mrs. Anna Shaw addressed the association on the canteen question and the social evil. Dr. Seaman responded. Attended the surgical section part of the afternoon.

June 7.—I attended the surgical section first and then the general meeting, at which Dr. George M. Kober delivered the address on State medicine, after which the new president was introduced and made a short address. The resolution of the Association of Military Surgeons was reported approved by the committee on legislation and was adopted without dissent by the meeting.

At 1 p. m. the association adjourned sine die.

Respectfully,

GEORGE T. VAUGHAN,
Surgeon, M. H. S.

SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

REPORT ON THE PROCEEDINGS OF THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE, HELD AT PARIS, FRANCE, AUGUST 2-9, 1900.

By P. A. Surg. M. J. ROSENAU.

VIENNA, AUSTRIA, *October 2, 1900.*

SIR: I have the honor to submit herewith a report upon the proceedings of the Thirteenth International Congress of Medicine, held at Paris August 2-9, 1900.

The report comprises only the work of the section on bacteriology and parasitology.

Respectfully submitted.

M. J. ROSENAU,
Passed Assistant Surgeon, M. H. S.

SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

[Inclosure.]

TOXINS AND ANTITOXINS.

Ehrlich first reviewed the work which has determined the progress of our knowledge on the subject of immunity. He then gave the following very able summary of the fundamental notions that we now possess of toxins and antitoxins:

(1) Toxins are extremely unstable substances that are found among the products of secretions of vegetable or animal origin.

(2) The chemical composition of a certain toxin, or of toxins in general, is at present impossible to determine, because we can not obtain them in sufficient quantity and in a pure state; and because it is difficult to separate them from certain modified products having analogous composition (toxoides).

(3) The biological test is the only criterion we have to determine whether a substance is a toxin—that is, on the one hand the poisonous action of the toxin, and on the other hand its power to produce antitoxins in an organism under certain conditions. This latter property is common to both toxins and certain enzymes, according to the work of Roux on the diphtheria poison.

(4) The poisonous action of most of the toxins is characterized by a period of incubation, in contradistinction to that of definite chemical poisons. This period of incubation can not be eliminated, no matter how great the dose of toxin.

Some substances that work without a period of incubation—such as make venom, and the poisonous substances of serums—show that they belong to the toxins by their power to produce antitoxins, and by their extreme unstableness.

(5) Definite chemical poisons have in no instance the power of producing antitoxins. The affirmation that it is possible to obtain antitoxin serums which are efficacious against inorganic substances, as the glycocides and alkaloids, is based upon errors of observation.

(6) From these peculiarities it follows that the action of toxins in the organism must be essentially different from that of other poisons.

The facts force upon us the conclusion that the fundamental condition of the toxic activity of these compounds resides in their combining chemically and specifically with the protoplasm of certain groups of cells.

Other poisons, for example, the alkaloids, also obey definite laws of selection in the body, but they differ from the toxins by the fact that their relation to the parenchyma, instead of being a true chemical combination, approaches more nearly the phenomena of a physical degeneration.

(7) The specific character of this chemical combination of a molecule of toxin is due to the fact that this molecule possesses a specific chemical grouping, the *haptophore* group.

The fixation of the toxins in the tissues as a result of this haptophore grouping does not sufficiently explain the toxic action of these compounds.

The toxic action necessitates in the molecule of toxin a second group—the *toxophore* group, the influence of which on the protoplasm depends upon the combination of the haptophore group with this protoplasm.

(8) It is possible under certain circumstances to separate the activity of the haptophore group from that of the toxophore group.

In fact Morgenroth has proven that in cold-blooded animals, as the frog, the haptophore group of tetanus toxin is capable of producing its effects even in the cold—while the activity of the toxophore group requires more elevated temperatures. (Interpretation of the experiments of Courmont.)

The difference in the time required for these two groups to act explains also the existence of a period of incubation.

Dönitz and Heymans, by following essentially different methods, have demonstrated that the diphtheria toxin and the tetanus poison are fixed very rapidly in the tissues, but that in spite of this fixation the pathological symptoms only appear later on.

(9) The fixation of the haptophore group of the molecule of toxin to the protoplasm is done by means of certain side chains possessed by the latter, and which have been given the name of *receptors*. In the normal life of the protoplasm these receptors also serve the purpose of nutrition, and fix the nutritive principles. Toxins have this in common with certain nutritive substances—that they have the haptophore group. It is possible, in fact, to produce typical antibodies by the use of certain nutritive substances, as per example, coaguline (Bordet).

(10) The receptors exist sometimes only in certain tissues—sometimes in most of the organs, as for example, tetanus poison in the guinea pig in the one ham and in the rabbit in the other.

(11) The absence of receptors in certain species of animals is perhaps one of the causes of natural immunity. On the other hand the presence of many receptors in organs of less vital importance can be the cause of the diminution of sensibility of the organism to a toxin, causing a sort of side-tracking of the molecules of toxin. (Dönitz, Roux.)

The receptors, far from being constant in the body, can show in certain cases very considerable variations (crotine, hemolysines).

(12) The fact that the receptors of the protoplasm effects a combination with the haptophore group of the toxins is a defect in life—especially for the nutrition

of the cells. This defect abolishes the phenomena of regeneration, in the sense that the protoplasm reproduces the receptors as a result of their possession of their natural functions.

Following one of the laws of biology, this regeneration is not limited to the compensation of the defect, but passes the limit. There is an overproduction. This overproduction may go on to such a degree by the repeated injections of toxins that finally there results a detachment of these receptors, regenerated in excess, into the circulation.

(13) The free circulating receptors of the protoplasm in the blood constitutes antitoxins. They retain their original property of chemically fixing the heptaphore group of the toxins.

(14) This theory of the production of antitoxins explains the great multiplicity of antitoxins and their specific character on the basis of physiological processes, and does away with the necessity of attributing to the organism an enigmatical intervention.

(15) According to their origin the antitoxins have a purely chemical relation to the toxins. The two bodies unite to form a new substance indifferent to the organism, as has been proven by the work of Fraser, Ehrlich, Cherry, Martin, etc.

(16) It follows from an exhaustive study of the conditions of neutralization of the toxins by their respective antibodies that poisons contained in a bouillon culture, especially those produced by the bacillus diphtheriæ, have an extremely complex composition.

(17) The bacillus of Loeffler produces two kinds of substances: (1) Toxins, (2) toxones, both of which have the property of fixing specific antibodies, and possess in consequence the same haptophore group. On the other hand, the toxophore complex of the toxones exerts upon the organism a feebler and sensibly different action than do the toxophore group of the toxins (absence of the power of causing neuroses, producing later paralysis.) (Madsen, Ehrlich.)

(18) All bouillon cultures of bacillus diphtheriæ contain in addition products of the modification of the toxins, having no toxicity, but capable of fixing the antibodies. These are the toxoids.

The origin of the toxoids is due to the fact that the complex toxophore of the molecule of toxins is much more unstable than the haptophore, and are destroyed much more readily by chemical and thermic agencies.

This observation is of particular importance, from the fact that the fluid poisons of diphtheria spontaneously weaken in this way—that the toxicity of the bouillon is decidedly lessened, while its power to neutralize antitoxin is perfectly preserved. There is a quantitative modification.

(19) We must admit the existence of several kinds of toxoids, corresponding to their different origins. Several facts seem to indicate that having been given the complexity of construction of the toxophore group the complete destruction of the molecule of toxin may take place gradually, and that if a suitable treatment is employed it is possible to obtain toxoids having a partial toxicity.

(20) It follows that it is possible to provoke the production of antibodies, not only by using toxins, but by using toxoids as well. In fact it is possible readily and rapidly to immunize animals as susceptible to tetanus as the mouse and guinea pig by administering toxoids only.

So that when sick individuals who are very susceptible are to be treated, toxoids will have the very first consideration.

(21) Further experiments have shown that the two groups toxophores and haptophores of the molecule of toxin are also found in certain ferments.

The hypothesis of Morgenroth on the existence of haptophore and zymophore group in the lab. ferments has been recently verified by Myers & Bashford, who have discovered the zymoides analagous to toxoids.

(22) The most recent researches treating of a new class of important cellular poisons, represented in particular by the bacteriolysines, the hemolysines, cytolysines (Pfeiffer, Bordet, Landsteiner, von Dirgern, Metchnikoff), have shown that these poisons have a very complex composition.

(23) The fact that the immunity bodies have a specific affinity for the cells (bacteria, red globules, spermatozoids) that were used to immunize the animal is explained by the theory of side chains, in admitting the existence of receptors having two groups possessing affinities of different combinations.

The immunity produced by bacteria and by antitoxins has many points in common, and finds its explanation in this theory.

IMMUNITY.

Buchner emphasizes the necessity of recognizing two kinds of immunity—

I. Natural immunity—natural resistance.

II. Specific immunity.

I. *Natural resistance.*—Natural immunity (except in the case of the innate insensibility of certain organisms against toxins) is due to the bactericidal properties of the alexins contained in the body juices and in certain cells of the organism.

Buchner hesitates to propose a purely humoral theory to explain immunity, in view of the fact that the alexins of the serum are adequate only in exceptional cases to explain the phenomenon of resistance independent of the action of the leucocytes. On the other hand, it has been known since 1894 that the alexins have their origin in the leucocytes.

About the only point of difference between the partisans of the humoral theory and the partisans of the theory of phagocytosis of Metchnikoff is that Buchner believes that the leucocytes actively secrete the alexins which are found in solution in the serum, while Metchnikoff and Bordet think that the alexins are not secreted from the living cell, but result from the death and solution of the leucocytes in the serum.

Metchnikoff believes that he has demonstrated that the leucocyte can engulf and assimilate the living virulent bacteria. Buchner thinks that this phagocytic action most frequently does not take place until the bacteria have been enfeebled by chemical process.

Laschtschenko, working in Buchner's laboratory, has found that by means of a series of sera heated to 60° C. and consequently rendered inactive, he extracted from rabbit leucocytes a bactericidal alexin without causing the death of the leucocytes. Here, therefore, we have a secretion without the death of the cell. In general the leucocytes can not be killed so very readily. According to the observations of Nakanishi (in Buchner's laboratory) leucocytes from various bloods held their form and even remained alive after one to four weeks in the ice chest. Death of the leucocytes occurred rapidly in distilled water, but the dissolution went very slowly so that after twenty-four hours many leucocytes still held their form. According to this it appears that the alexins are secreted from living leucocytes. And it is likely that the bacteria mostly suffer chemically before they are engulfed. However, it has been frequently confirmed that living and virulent bacteria can be eaten by the leucocytes. This fact can not be gainsaid, but it must be remembered that microbes exist in a state of latent life, in which the conditions of life seem to hibernate, and afterwards reawaken. Therefore, when microorganisms in consequence of external influences cease their process of metabolism and multiplication they should not be considered as dead or even permanently damaged.

It is anyhow certain that phagocytosis is not always one of the indispensable conditions for the destruction of the bacteria and the cure of infection. In order to properly judge the rôles played by the leucocytes it must not be forgotten that there is a chemotactic attraction exerted by dead as well as live bacteria, by bacterian proteids, by gluten casein, etc., which proves that their essential character is the same as receptor cells. The production and secretion of alexins seems to accord perfectly with this fact, if alexins are considered among the hystolytic enzymes. This was first confirmed by Th. Liben, who demonstrated the enzymes that can effect the dissolution of histological elements—for example, in the softening of abscesses, or by the injection of balsam of Peru, or other substances that attract the leucocytes.

This same histolytic solution can take place in pathological tissue, for example, the solution of tubercles; and further this action may take place upon the infectious agent itself; that is, the bacteria.

Phagocytosis, or the solution in the inside of the leucocyte by means of the same histolytic enzymes, seems to be only a special instance, against the general case of solution that occurs outside of the leucocytes.

II. Specific immunity.—There exists (1) specific antitoxic immunity; (2) specific bactericidal immunity; (3) specific Hemolytic immunity.

Specific immunity is always produced when there has been previously injected into the organism: (1) Specific toxins; (2) specific bacteria, living or dead; (3) specific red corpuscles, fresh or heated to 60° C. In all three cases there appears in the blood and serum of the animal a substance which is not destroyed at 65° C., which Ehrlich calls antibodies (anticorps). In (1) it is the well-known antitoxin contained in diphtheria, tetanus, and other antitoxic sera. In (2) and (3) the antibodies do not produce a direct apparent effect, but work in combination with the normal and not specific alexin.

There are no specific bactericidal substances, no specific hemolytic substances. In both cases we have to do with a combined action. That is, the bacteria and erythrocytes are prepared for the action of the normal alexins by the specific action of the antibodies. It is a matter of indifference whether the alexins are produced by the same species of animal in which the antibodies are produced by specific inoculations.

This preparation of the erythrocytes consists, as can be shown, in the specific hemolytic immunity, in the attraction and loose combination of the antibodies with the specific erythrocytes, in consequence of which they are dissolved by the normal alexin. Probably it is the same in the working of specific bacterial immunity. It may be affirmed with certainty that the action of antitoxin in neutralizing a specific toxin is due to a mutual combination. According to this theory the true principle of specific immunity consists always and in every case in an attraction and special combination between the antibodies and the object of specific reaction—toxin, bacteria, erythrocytes, etc.

The enigma reserved for the future lies principally to find out the nature and origin of the antibodies; in addition also the exact nature of the specific combination which takes place between antitoxin and toxin, antibody and object of reaction.

CONCLUSIONS.

"Natural resistance" and "specific immunity" depend upon different principles. The first is characterized by an alexin, the latter by the specific antibodies.

The alexins are killed at 60°. They differ according to the animal species which produces them. They show no attraction for the object of reaction—i. e., the bacteria, erythrocyte, etc., used in the inoculation.

The antibodies are not destroyed at 65°. They do not differ according to the species of animal which produces them, but according to the reagent used in producing them, and they have a specific attraction for this reagent, with which they combine.

Alexin and antibody exist in the organism at the same time and often work in combination. Natural resistance and specific immunity can operate in the same organism at the same time. For instance, the cure of a case of typhoid fever can be caused by an augmentation of the natural resistance concurrently with the production of the specific antibodies. It is the work of clinical medicine to diagnose and differentiate each of these conditions and changes.

METCHNIKOFF ON IMMUNITY.

Enlarging upon the general conception of immunity, Metchnikoff, after having shown that the most general phenomenon in natural and acquired immunity consists in a phagocytic reaction, stated that he considered that the immunity of infectious diseases is but a particular instance of the reabsorption of former elements that takes place generally, and that the phagocytes act in virtue of their sensibility and their power to ingulf and digest these formed elements. When the body is in a refractory state (state of resistance) the microbes are never eliminated by the emunctories; they are always disorganized, just as the old formed elements, such as the leucocytes and other objects, are eaten and destroyed.

This dissolution is in fact a true process of digestion, analogous to extracellular digestion. Here, just as in the inferior organisms, the digestion is intracellular.

This intracellular digestion is accomplished by aid of ferments, among which cytase occupies first place.

The cytases have their origin in the leucocytes. They may be prepared by making an emulsion of the marrow, the spleen, the lymph glands. A cytalytic fluid is thus obtained, which is destroyed by heating to 50°.

The cytase in the body remains confined in the phagocytes and does not diffuse into the plasma. This diffusion only takes place when there is a destruction of leucocytes or phagocytes, as, for example, in the serum about the formation of a coagulum.

As a rule, the cytases can not exist alone; they need other substances. They are aided in their digestive functions by a substance more resistant to heat, i. e., philocytase, analogous to the substance intermediaire of Ehrlich. This philocytase is the product of the phagocytes which is most often excreted in the plasma. The presence of this philocytase is not, however, necessary, for not only in natural immunity, but in certain cases of acquired immunity the organism can resist without the presence of philocytase in the blood.

The antitoxins are then, if not entirely, at least in part, the products of the phagocytes, which remain the true agents of immunity, both natural and acquired.

MALARIA.

Lavaran read a report upon some of the advances made in this important subject. The following is a summary:

The hæmamœba malariæ presents two varieties which may be called parva and magna, according to the dimensions of the parasites.

When a malarial patient has the small variety (parva) in his blood, say in Senegal, and returns to France and then suffers a relapse, ordinarily the large variety (magna) is now found in his blood. Therefore these are not different species, but varieties of the same parasite.

The technique applicable to the study of malaria has made notable progress during the past years. Koch, Ziemann, Nocht, and Ruge have perfected the method of Romanowski. Lavaran has shown a method of staining the nuclei of the hæmatozöon in the red corpuscles, more certain and easier than the original or modified method of Romanowski.

The researches of Simond, De Schaudinn, and Siedlecki on the corcidia have cleared up the much-discussed question of flagella of the hæmatazöon malariæ. It is now known that the flagella are the male elements destined to fecundate the female elements.

The observations of McCullum, Optie, Koch, and Marchoux leave no doubt as to the rôle of the flagella. Involution or degenerate forms of the hæmatozöon do not then exist.

In 1884 Lavaran gave out the hypothesis that the *H. malariæ* is found outside the human organism, as a parasite in the mosquito. This hypothesis has been verified by Ross and confirmed by many observers—Koch, Grassi, Bignami, and Bastianelli.

All the anopheles seem to have the power to propagate malaria. In many places of the world the coexistence of malaria and anopheles has been confirmed. On the contrary, in healthy places, only culex are found.

The anopheles then which have stung a malarial person can infect healthy ones. The germs (blastes of Ross) are found in the salivary glands of such an insect and are inoculated with the secretion of the venomo-salivary glands. It is too soon to announce that malaria is always carried in this way.

Malaria is often contracted in uninhabited localities. The fact that the turning up of the soil and of chilling often causes recrudescences of endemic paludism is also difficult to explain if we admit that malaria is always inoculated by the sting of anopeles which have sucked malarial blood.

Although certain points are still obscure, there is now no doubt that, as far as the prophylaxis of malaria is concerned, measures to protect against the mosquito are of the first importance.

It is important, also, in order to prevent recrudescences of malaria in old marshy regions, to guard the sick against the bites of the anopeles.

Koch has made observations in Africa favorable to the existence of an immunity acquired by the natives of marshy regions. This immunity is the result of attacks of malaria during youth. Many facts show that the natives of a marshy country frequently have cachexia rather than the true acute chill of malaria, but this does not merit the name of immunity.

The attempts made to establish an artificial immunity against malaria have so far failed.

THE CAUSE OF CANCER.

This subject was ably treated by Borrel. The following is a summary:

He pointed out that epithelial cancers are above all characterized by a proliferation of the epithelial cells, and up to the present time no organism is known to have the power of producing an abnormal proliferation of epithelium.

We only know that nodes of the nature of the mesoderm can be produced, but it has not been proven that the group of coccidia can cause true epithelial tumors—cancer.

There is a special evolution of the epithelial cells, and not of the parasites, in all cases of cancer.

Thomas first showed that the figures given to support the theory of coccidia are of altogether another nature. There exists intracellular inclusions, presenting the form of round bodies or of intracellular vacuoles.

This vacuolization is frequent in cancer of glandular origin, and frequently condensed mucus is found in the interior. With a new technique Sawchenko made comparative studies of the vacuoles and those of the young stages of the coccidia of the rabbit. The parasite presented itself oftenest in the form of an amœba lodged in a vacuole, which often contained mucus.

According to Bordet there exists again an atypical evolution of the cancer cell—of the attraction sphere—or the idiosome, and Sawchenko himself has abandoned his first hypothesis.

The recently developed theory that cancer is due to a yeast was carefully reviewed. This is the blastomycetic theory.

Busse has shown the development of a tumefaction of the skin under the influence of a yeast, as Curtis showed in his study on the saccharomyces tumefaciens—subcutaneous. This is tumefaction—not tumor.

San Felice, Plumer, and Sawchenko admit the blastomycetic theory and interpret as yeasts all the old figures described as amœba.

Mafucci and Saleo have shown that yeasts which have been isolated from tumors are sometimes impurities from a secondary infection, or even from the air of the laboratory.

Borrel has well shown that the inoculation of a yeast is accompanied by a reaction which may end in the formation of epithelioid cells, but not epithelial cells.

The rôle of the yeasts has been studied by San Felice, by Wlaeff, who obtained in several cases out of numerous experiments a tumor resembling adeno-carcinoma.

In the opinion of Borrel up to the present time neither the blastomycetic origin nor the bacterial origin of cancer has been proved.

* * * * * * *

Leopold, of Dresden, read a paper on the blastomycetic origin of cancer and showed an organism belonging to the moulds, isolated by Bra, and found in the blood and pathological tissue. In the discussion Metchnikoff expressed the opinion that, contrary to the views of Leopold and Bra, he believed their work rather proved that the organism isolated by them was not the cause of cancer, because the tumors produced in their experimental work have not the true epithelial character.

TUBERCULOSIS.

Very interesting conclusions are drawn by Martin and Vandremer in their studies of peritoneal tuberculosis of the guinea pig, showing the way tubercular peritonitis may be prevented, and giving the rationale of the cure of this form of the disease:

If tubercle bacilli are injected into the peritoneal cavity of a guinea pig, there usually results a tubercular peritonitis, with the formation of readily visible tubercles. If a small quantity of a young culture is used, this always happens. If, on the other hand, a large quantity of an old culture of tubercle bacilli (at least six months old) is injected into the peritoneal cavity, there results in certain cases death from cachexia, and at the autopsy no tubercles are found in the organs, or very few are found, not sufficient to explain the death of the animal.

Of seven cultures examined the authors were able to find only one of them that always kills the guinea pig rapidly when a large quantity of a six-months-old culture is injected into the peritoneal cavity.

They think that the microbe acts by its poisons, and that the guinea pig succumbs to a true intoxication. This is the more likely, since the culture which gave the most constant results was the same one that in previous experiments on tubercular meningitis and in the study of the poisons of tuberculosis gave the largest quantity of these poisons; that is, killed a guinea pig in less than twenty-four hours when 0.1 c. c. of a three-months-old culture filtered through a Chamberlain bougie was injected into the brain.

To verify this hypothesis Martin and Vandremer sought a method to kill the bacilli without destroying the poisons. This they accomplished by treating the bacilli with ether.

The tubercle bacillis must remain in ether a long time in order to be killed.

In order to be certain that all are killed and to accomplish this more quickly it is necessary to first wash the bacilli in ether, then dry them, then replace in ether. When the operation is well done, all the gummous substance disappears and the bacilli form with the ether a true emulsion. The ether is again evaporated and the microbes dried and diluted with water injected into the peritoneal cavity of a guinea pig.

The ether has another action—it dissolves a part of the tubercle bacilli; that is, the fatty material. If examined under the microscope after three weeks in ether, more than half the microbes do not stain by Ziehl's method. These bacilli, dead and deprived of fat, still contain the poison, but all traces of the organism do not contain an equal amount, and it is not possible to surely kill a guinea pig with all tubercle bacilli treated with ether.

With the very toxic microbe described above, the results, on the contrary, are constant. The tubercle bacilli treated with ether and injected into the peritoneal cavity of guinea pigs kill them by cachexia in a variable time, depending upon the dose used.

With 0.05 gram of the microbian bodies the guinea pig dies in forty-eight hours; with 0.04 gram it dies in eight days; with 0.03 gram it dies in one month; with 0.02 gram it dies in six weeks.

The autopies do not show a trace of tubercular lesions. The intestines are often hyperæmic. The spleen is not apparently enlarged. The liver is red violet on the cut surface. The suprarenal capsules are always enlarged, and upon section are hyperæmic in the center. A triple effusion into the pleura, pericardium, and peritoneum is frequently noted. In the rapid deaths this effusion is often abundant. The lungs are strongly congested.

This point established, is it possible to prevent the death of the guinea pig?

Following the work of Metchinkoff and his pupil Isaëff the authors tried to increase the resistance of the guinea pig by producing an artificial peritoneal hyperleucocytosis. In order to accomplish this they injected into the peritoneal cavity of the guinea pig 0.05 of a mixture of two-thirds bouillon and one-third serum of a guinea pig. Twenty-four hours following they injected the microbian bodies treated with ether, and saw that the guinea pigs resisted the lethal dose of tubercle bacilli treated with ether. The controls became thin and died with fever. The guinea pigs prepared did not fall off in weight. Their temperature rose, but there was not consecutive fever, and after a year they are alive and well.

To resume—

(1) These experiments confirm the existence and importance of the tubercular poisons.

(2) They show also that the cells of the guinea pig, so sensitive to the tubercle bacilli, can under given conditions digest these bacilli treated by ether without producing tubercles.

(3) Finally it explains the mode of cure of a tubercular peritonitis, and the best treatment would evidently be that which provoked most surely a hyperleucocytosis.

STAINING OF TUBERCLE BACILLI.

Marmorek pointed out some important characteristics in the staining of the tubercle bacillus.

If in a tuberculous membrane in the stage of development we examine the very young portion of the membrane three or four days after inoculation, it is observed that the bacilli have a different color reaction than those which are older. In fact while the old bacilli stain only by the method of Ziehl, the young (primitive) bacilli stain by the usual methods: For example, by an aqueous solution of methylene blue. Further, if these young bacilli are subjected to the double stain of Ziehl-Kuehne, we see that only a very small number of them remain red; the majority stain blue.

This affinity for the usual basic dyes is a characteristic of young bacilli, which they lose as they grow older. It is, however, possible to fix it up to a certain point.

A particle of young membrane composed of young bacilli transplanted to a new medium develops with great rapidity. But the culture now is characterized by the fact that it is composed for the most part of primitive bacilli. The organisms remaining red after Ziehl-Kuehne are very few. In repeating this sort of passage we arrive by selection to a culture containing more and more tubercle bacilli not presenting the classical characteristics of that organism, but identical with the primitive bacilli of the young membrane. As these cultures grow old the individuals resisting aniline dyes are in the majority. They look like a series of red grains plunged into a blue mass and recall from a distance the aspect of spores. This last fact adds to the thought that the culture of primitive bacilli left to themselves secretes a substance capable of attacking and dissolving the waxy capsule which protects the normal tubercle bacillus.

Very old cultures (several months) present between the corrugations is lots of thin membrane composed of primitive bacilli.

The color reaction of the primitive bacillus is explained by the fact that in the young membrane the microbes have not yet had time to manufacture their waxy capsule. The old and thicker layers prevent them obtaining the elements necessary to elaborate this capsule.

HUMAN AND AVIAN TUBERCULOSIS.

Arlonig and Courmet succeeded in modifying the tubercle bacillis of Koch of human origin, so that it resembled the avian variety.

They cultivated the organism on potato bathed in 6 per cent watery glycerin solution. Some colonies take the fatty, bulbous appearances. By cultivating these colonies they finally arrived at an organism having the characters of the tubercle bacillus of birds. The young bacilli of these cultures decolorized very readily with acids. As to virulence, this also was modified. The organism no longer gave the villemin type, but the yersin type, and became very virulent for chickens.

REPORT ON THE PROCEEDINGS OF THE COMMISSION CHARGED WITH THE REVISION OF THE NOMENCLATURE OF CAUSES OF DEATH AT PARIS, FRANCE, AUGUST 18-21, 1900.

(Bertillon classification.)

By P. A. Surg. M. J. ROSENAU, Vice-President of the Commission.

PARIS, FRANCE, *November 30, 1900.*

SIR: I have the honor to submit herewith my report upon the work of the commission charged to revise the nomenclature of the causes of death.

This nomenclature has been recommended for general adoption on January 1, 1901, by the International Congress of Hygiene and Demography, by the International Statistical Institute, by the American Public Health Association, and by the International Conference of State and Provincial Boards of Health.

This international revision, which was largely brought about by American registrars, has already been adopted by the following cities and States: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Michigan, Indiana, Minnesota, Colorado, etc., Greater New York, Boston, Buffalo, Baltimore, Savannah, Columbus, Milwaukee, Dubuque, Toledo, Washington, Charlestown, etc.

It is important that all these States and cities use a similar translation. I am informed that some of them are waiting for my official translation, and I have therefore to respectfully request that the report be printed as soon as practicable, in order that it may be ready for use for the statistics of 1901.

I have also to respectfully recommend that our Service adopt the nomenclatures in place of the antiquated one now in use.

Very respectfully,

M. J. ROSENAU,
Passed Assistant Surgeon, M. H. S.

SURGEON-GENERAL, Marine-Hospital Service.

[Letter of transmittal.]

PARIS, FRANCE, *November 1, 1900.*

SIR: In compliance with your orders of July 10, I have the honor to state that I attended the meetings of the International Congress charged to revise the nomenclature of the causes of death as the official delegate from the United States.

The commission met August 18-21, 1900, with representatives from twenty-six countries present. The work of the commission consisted largely in revising the old system of nomenclature devised by Dr. Jacques Bertillon, chief of the bureau of municipal statistics of the city of Paris. Although many changes were made in this old system to meet the march of progress, nevertheless the nomenclature as adopted by the commission is essentially the Bertillon system, and the credit and honor is due Dr. Bertillon, not only as being the father of the nomenclature, but for the great industry and zeal shown by him in bringing about international uniformity.

To American registrars, in particular Dr. Cressy L. Wilbur, chief of the division of vital statistics of the State of Michigan, belongs the credit of being most active in bringing about this revision, and in suggesting important improvements.

Inclosed is an extract from the proceedings, which shows the part taken by our country. These few pages from the proceedings also indicate some of the difficulties that confronted the commission composed of members from so many parts of the world, speaking so many different languages.

The work of the commission, as given in the finished nomenclatures, is by no means perfect. There are two reasons for this:

First. The classification is based on the seat of the disease and not its cause. Medicine is not yet a sufficiently exact science to gather mortality statistics according to the cause of the disease.

Second. The nomenclature is a compromise. This is a necessity where so many varied interests are represented. Each country was compelled to make concessions for the sake of uniformity.

A uniform system of nomenclature adopted by all countries is of much greater value, even though imperfect, than an isolated system, considered perfect.

The nomenclature as adopted is sufficiently elastic to meet the needs of all countries suffering from local diseases or local diagnoses.

Any system of nomenclature will soon become obsolete unless changed with the progress of time. Provision has been made for this change by establishing an international bureau of statistical demography, and also by providing for a decennial revision.

Respectfully submitted.

M. J. ROSENAU,
Passed Assistant Surgeon, M. H. S.

SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

[Inclosure.]

International Commission charged to revise the nomenclature of the causes of death, Paris, August 18-21, 1900.

LIST OF DELEGATES.

Germany.—Dr. Proebst, director of the statistical bureau of the Kingdom of Bavaria (delegate from Bavaria); Dr. Würzburger, director of the statistical bureau of the city of Dresden (delegate from the city of Dresden).

Argentine Republic.—Dr. Télémaque Susini.

Austria.—Prof. de Inama Sternegg, member of the Chamber of Lords, chief of the section, president of the Imperial Royal Statistical Commission, and professor at the University of Vienna; Dr. François-Maurice Haas, municipal councilor of the city of Vienna (delegate from the city of Vienna); Dr. Stéphane Sedlaczek, municipal councilor, director of the statistical department of the city of Vienna (delegate from the city of Vienna).

Belgium.—Dr. Van Ermengen, professor at the University of Ghent, member of the superior council of public hygiene; Dr. Putzeys, professor at the University of Liege, member of the superior council of public hygiene.

Bolivia.—Dr. Napoleon Rana, professor at the University of San Xavier, Sucre.

Chile.—Mr. Pardo Correa.

Denmark.—Dr. Hoff, chief of the sanitary service of the city of Copenhagen, chevalier of the order of Danebrog.

Ecuador.—Dr. Rafael Rodriguez Zambrano, professor at the Central University of Ecuador.

Spain.—Gen. Charles Barraquer, director of the Geographical and Statistical Institute of Spain.

United States.—Dr. M. J. Rosenau, passed assistant surgeon and director of the hygienic laboratory, United States Marine-Hospital Service.

France.—Dr. Jacques Bertillon, chief of the municipal statistical work of the city of Paris, member of the consulting committee of public hygiene of France, member of the superior council of statistics; Dr. P. Brouardel, member of the institute, dean of the Faculty of Medicine of Paris, president of the consulting committee of public hygiene of France; Dr. Netter, associate professor of the Faculty of Medicine of Paris, member of the consulting committee of public hygiene of France.

Greece.—Dr. Spirido Clados, Dr. Evanghelli Callioudji.

Honduras.—Mr. Désiré Pector, general consul of Honduras.

Hungary.—Dr. Corneille Chyzer, state councilor, chief of the sanitary section to the minister of the interior of Hungary; Dr. Aladar Kovacs, under secretary to the central statistical bureau of the Kingdom of Hungary.

Italy.—Dr. Rudolphe Livi, chief of the statistical bureau of the war office of the Kingdom of Italy; Dr. Sanroliquido, general inspector of hygiene of the Kingdom of Italy; Dr. Louis Simonetta, associate professor at the University of Sienne.

Mexico.—Dr. Porfino Parra, professor at the Faculty of Medicine of Mexico; Dr. José Ramirez, sanitary inspector, secretary to the superior sanitary council of Mexico.

Monaco.—Dr. Colignon, director of the sanitary services of the Principality of Monaco.

Norway.—Dr. Klaus Haunsen, physician in chief of the hospital of Bergen.

Netherlands.—Mr. Menno Huizings, inspector of hygienic services of Holland; Mr. Saltet, professor of hygiene at the University of Amsterdam.

Peru.—Dr. Téobaldo Cancino; Dr. Pablo S. Mimbela, chief of the medical dispensary at the University of Lima; Dr. Neuhaus; Dr. Antoine Perez Roca, professor at the University of Lima; Dr. Armand Velez, dean of the Faculty of Medicine of Lima.

Portugal.—Dr. Ferreira de Mattos, jr., professor at the University of Coïmbre; Dr. Jean de Mello Vianna, member of the Royal Academy of Sciences at Lisbon; Dr. Charles Leopold dos Santos.

Russia.—Dr. Basile Grebenchtchikoff, councilor of state and agent of statistical and epidemiological affairs in the department of medicine; Dr. Alexandre Timofeiew, chief of bureau in the department of medicine.

Republic of Salvador.—Mr. Rafael Zaldivar, minister plenipotentiary of Salvador in Paris.

Sweden.—Dr. Wawrinsky, councilor to the royal medical administration of Sweden.

Switzerland.—Dr. Guillaume, director of the federal bureau of statistics at Berne.

Urguay.—Dr. Alfred Navarro; Dr. Henri Pouey, professor at the Faculty of Medicine of Montevideo.

EXTRACTS FROM THE PROCEEDINGS OF THE COMMISSION.

The proceedings in which the United States took a special part is herewith reproduced. While there was only one official delegate from the United States present at the meetings of the commission, nevertheless its work received considerable attention from American registrars, who communicated their opinion in writing. These suggestions received the careful consideration of the commission.

TUBERCULOSIS.

M. Bertillon (France) spoke against classing all tuberculous diseases together, but preferred to place them under the heading for each organ. This arrangement would enable one without difficulty to know the total number of cases of meningitis, for example, which is very useful, for among so-called "simple meningitis" there are without doubt many that are tuberculous. The same observation applies to peritonitis, enteritis, etc.

Dr. M. J. Rosenau (United States).—The prime importance of tuberculosis makes it indispensable that we may be able to read from a statistical table, without difficulty and without collecting and adding up widely separated figures, the total number of persons dead of tuberculosis. It seems inadvisable, then, to separate tuberculosis under each organ and thus divide the facts in many places, as is done in the nomenclature of Virchow. Mr. Rosenau, therefore, was opposed to the proposition of M. Bertillon.

After further discussion the commission decided by a vote of 12 to 3 (2 absent) that tubercular diseases should all be grouped together in the same place.

CHOLERA ASIATICA.

Include under this heading, Indian cholera, cholera (without classification), cholera morbus, and epidemic cholera.

Cholera nostras.—Dr. M. J. Rosenau explained to the commission what the sanitary council of the Province of Quebec and other American physicians had previously suggested, viz, that in America "cholera morbus" does not mean "Asiatic cholera."

M. Brouardel (France) thinks that the expression cholera morbus, formerly used to signify cholera asiatica, has become infrequent. He thinks therefore that the words "cholera morbus" may be omitted from the amplification of the heading Cholera asiatica. This would permit each country to interpret this expression in conformity with current usage.

(Adopted.)

SMALLPOX.

Include under this heading variola, varioloid. Do not include varicella. Frequent complications, meningitis, endocarditis, suppuration, albuminuria.

An American physician suggested that "varicella" be placed under the heading "Variola;" deaths from varicella can be counted without error as due to variola.

Mr. Körösy expressed an analogous opinion. Varicella, he said, never causes death, but when there is a death, it is really variola, and the record should attribute death to this disease.

The statistical department of the city of Vienna was of the same opinion.

Discussion.—Mr. Wurzburger (Germany) spoke against the opinion expressed by Mr. de Körösy. Rare as deaths from varicella are, they are sometimes met with. They have considerable importance in countries such as Germany, which are well protected against variola, for it means much to know whether deaths (whether one or two) are from variola or varicella.

Mr. Wurzburger proposed to retain the text.

(Text maintained.)

OTHER EPIDEMIC DISEASES.

Plague.—Dr. M. J. Rosenau (United States) would like to see peste in the first classification. This disease presents a particular interest from the point of view of international hygiene, and in order to give due warning that a port or country is menaced the weekly publications should publish every case as soon as it is known.

M. Bertillon (France) proposes to leave to each country interested the permission to put this heading in the first classification as well as in its weekly reports.

Put to a vote, the proposition of M. Rosenau was lost—15 votes against 3.

Leprosy.—Dr. M. J. Rosenau (United States). Leprosy is very rare in the United States. There are very few deaths from this disease each year. However, in view of its importance, the speaker is in favor of making a special heading for leprosy.

M. Jacques Bertillon (France) thinks that this is not very useful, as each country will have permission to develop, according to its needs, the title "Other epidemic diseases." In consequence, Norway, or even Bosnia-Herzegovina, or the island of Hawaii, can take count of this disease.

M. Netter (France) asked that a place be given leprosy following contagious diseases, with which it presents many analogies.

The representatives of Russia and Belgium expressed a similar opinion.

The proposition of the delegate of the United States is adopted.

ORGANIC DISEASES OF THE HEART.

Dr. Cressy L. Wilbur (Michigan) finds that this title lacks precision, and thinks that many deaths are classed under it which are really bad diagnoses.

He also states that there is no expression in French to translate the term "heart failure," "which is the special opprobrium of American mortality statistics."

He proposes to class "heart failure" among "ill-defined diseases."

Discussion.—M. Netter (France) remarked that the objectionable expression is found in other forms in other countries. In Germany the expressions "herzlämung" (paralysis of the heart), "herzschlag" (apoplexy of the heart) have no more signification.

Others expressed the same opinion, and the names are therefore taken out of this heading.

OTHER AFFECTIONS OF THE CIRCULATORY SYSTEM.

Include under this heading cardiac accidents (not determined), splenic tumor, splenopathy, etc.

M. Brouardel (France) finds it bad to count the diseases of the spleen under this heading. It would be necessary either to open a special heading, or better, to consider them under the heading "paludial cachexia," for they are almost always of malarial origin.

M. Rosenau (United States) finds that this solution would have its inconveniences, for splenic diseases in America are not always of malarial origin, and prefers a special heading.

(Adopted.)

SENILE DEBILITY.

Dr. Cressy L. Wilbur finds the words "senile debility" equivalent to an absence of diagnosis, and proposes to class this heading under "ill-defined diseases."

In the discussion on this question an attempt was made to fix the age after which debility may be called "senile."

M. Brouardel (France) thought that this would be very difficult to do.

The commission was of the same opinion, and the heading was maintained.

ANTHRAX.

An American physician asked that "carbuncle" due to staphylococcus be not confused with "malignant pustule" or anthrax due to bacillus anthracis.

Remarks.—Malignant pustule is a general disease, due to bacillus anthracis (charbon), and is included under heading No. 16.

Furoncle, due to staphylococcus, is included under heading No. 127.

The word anthrax is not a synonym for malignant pustule in French—as is the case in English.

M. Bertillon (France) believes that the word "anthrax" leads to confusion, for in several countries it is synonymous with "charbon," "malignant pustule." He suggests, therefore, that it be replaced by "furoncle."

(Adopted.)

INFANTILE DIARRHEA.

Dr. Cressy L. Wilbur (Michigan) and several other American physicians asked that an age limit (2 or 5 years) be fixed. The customs followed in the different bureaus of statistics are very variable in this regard.

The commission fixed the age limit at two years.

PROGRESSIVE MUSCULAR ATROPHY.

An American physician proposed to omit this heading and to add it to "other diseases of the nervous system," because of the rarity of the disease.

This was done.

CONGESTION AND CEREBRAL HEMORRHAGE.

Dr. Cressy L. Wilbur and several others prefer the word "apoplexy," and not "congestion."

The commission decided to retain the text.

OTHER FORMS OF INSANITY.

An American physician asked that it be understood that when an insane person dies of another disease his death be recorded to that disease and not to his mental state.

The commission confirmed this opinion.

DYSENTERY.

"Dysentery is placed among the general diseases instead of under diseases of the digestive system. This was in accordance with the suggestion of American registrars."

ERYSIPELAS.

"Erysipelas is placed among the general diseases instead of under skin diseases. This will meet the wishes of a large number of American statisticians who consider the position of erysipelas as a serious objection to the old system. The change was made at the request of several American physicians, as well as others."

TUMORS.

"Tumors are now placed in connection with cancers, but separately stated. This desirable plan was first introduced, so far as we are aware, in the mortality statistics of the United States census, and the idea was adopted in the classification formerly used in the Michigan registration reports before the adoption of the Bertillon system. While the return is to some degree indefinite, a large number of such cases are actually cancers, and it is useful to have the data in close connection. Of course certain classes of tumors, as ovarian tumors and fibroids, are elsewhere classified." (Michigan Monthly Bulletin of Vital Statistics, October, 1900.)

The international classification of diseases and causes of death (Bertillon classification) as adopted by an international commission, and reported to and adopted by the Eighth International Congress of Hygiene and Demography, Paris, France, August 18 to 23, 1900.

The need for a uniform comparable system of nomenclature of diseases and causes of death has long been felt by sanitarians and statisticians, and efforts have not been wanting to bring one about, but the difficulties in the way of such an international agreement have heretofore seemed insurmountable.

The International Institute of Statistics at the Vienna meeting in 1891 voted (upon motion of Dr. Guillaume, director of statistics of the Republic of Switzerland) "to request Dr. Bertillon to report a system of nomenclature to the next meeting of the statistical congress," and in accordance with this resolution Dr. Bertillon presented three systems to the Chicago session in 1893. This system was there and then adopted by the city of Moscow, Russia, and by the Bureau of Hygiene of the Province of Quebec.

In 1897 the American Public Health Association declared its opinion that this system should be immediately put into use by the three great nations of North America, and further recommended that in order that it might be maintained fully abreast of the advance of medical science, that it should be subject to decennial revision, and that the first revision should be presented to the International Congress of Hygiene and Demography at the Paris meeting of 1900.

In accordance, therefore, with this resolution, the subject was presented at the Paris meeting of the Eighth International Congress of Hygiene and Demography, and formed the subject of deliberation by an international commission, upon which were represented the following countries: Germany, Argentine Republic, Austria, Belgium, Bolivia, Chile, Denmark, Ecuador, Spain, United States, France, Greece, Honduras, Hungary, Italy, Mexico, Principality of Monaco, Norway, the Netherlands, Peru, Portugal, Russia, Republic of Salvador, Sweden, Switzerland, and Uruguay.

Dr. Brouardel was chosen president; Drs. Inama Sternegg, of Austria, Milton J. Rosenau, of the Marine-Hospital Service of the United States, and Putzey, of Belgium, as vice-presidents; and Drs. Jacques Bertillon and Charry as secretaries.

The Bertillon system of classification of diseases and causes of death was then considered and discussed and finally adopted by the commission on behalf of the countries which they represented.

The author of the system as adopted is Dr. Jacques Bertillon, chief of the division of statistics of the city of Paris, who has thus worthily crowned the labors of a lifetime, much of which has been devoted to the subject of the collection and classification of vital statistics. Dr. Bertillon must not be confounded with Dr. Alphonse Bertillon, the author of the well-known system of the measurement of criminals.

The system, having been adopted by the international commission, at once began to attract the attention of State and local health officers and registrars of health in the United States, and the Surgeon-General of the Marine-Hospital Service was in receipt of numerous requests for the translation and publication of the system. After mature deliberation the work of translation and publication was undertaken, but it was deemed essential in the interests of accuracy that the translation should be undertaken by a medical man, who should be in sympathy with the proposed revision of nomenclature, and the work was intrusted to a medical officer of the Marine-Hospital Service and is herewith presented.

While fully recognizing the claims of Dr. Bertillon as the originator of the system, it has been deemed better to suppress the name of the individual, and to give it the title of the "International system," in recognition of the fact of its adoption without dissent by representatives of most of the nations of the world.

The only addition which has been made to the translation (which has been made with care) has been the addition by the Bureau of an index, showing every disease which is to be indicated, and giving its numerical position in the list.

It is suggested that in preparing blanks for recording statistics of diseases and deaths that these should be reported in their numerical order to prevent confusion.

As has already been mentioned, the new international system has received the formal sanction of the American Public Health Association, and the subject of its adoption by the Medical Departments of the United States Army, Navy, and Marine-Hospital Service is now under consideration.

I. NOMENCLATURE INTENDED FOR MORBIDITY STATISTICS.

I. General diseases:
  1. Typhoid fever (abdominal typhus).
  2. Typhus fever.
  3. Relapsing fever.
  4. Intermittent fever and malarial cachexia.
  4. Repeated. Of which, malarial cachexia.
  5. Smallpox.
  6. Measles.
  7. Scarlet fever.
  8. Whooping cough.
  9. Diphtheria and croup.
  9. Repeated. Of which, diphtheria.

I. General diseases—Continued.
  10. Influenza.
  11. Miliary fever (sweating fever).
  12. Asiatic cholera.
  13. Cholera nostras.
  14. Dysentery.
  14. Repeated. Of which, epidemic dysentery.
  15. Bubonic plague.
  16. Yellow fever.
  17. Leprosy.
  18. Erysipelas.
  19. Other epidemic diseases.
  20. Pyemia and septicemia.
  21. Glanders and farcy.
  22. Anthrax (malignant pustule).
  23. Rabies.
  24. Actinomycosis, trichinosis, etc
  25. Pellagra.
  26. Tuberculosis of the larynx.
  27. Tuberculosis of the lungs.
  28. Tuberculosis of the meninges.
  29. Abdominal tuberculosis.
  30. Pott's disease.
  31. Cold abscess.
  32. White swelling.
  33. Tuberculosis of other organs.
  34. General tuberculosis.
  35. Scrofula.
  36. Syphilis—
    A. Primary.
    B. Secondary.
    C. Tertiary.
    D. Hereditary.
  36. Repeated. Soft chancre.
  37. Gonorrhea (adults).
  38. Gonococcal affections of infants.

39.	Cancer and other malignant tumors	of the buccal cavity.
40.		of the stomach, liver.
41.		of the peritoneum, intestines, rectum
42.		of the female genital organs.
43.		of the breast.
44.		of the skin.
45.		of other organs, and unspecified.

  46. Other tumors (except of the female genital organs).
  47. Acute articular rheumatism.
  48. Chronic rheumatism and gout.
  49. Scurvy.
  50. Diabetes.
  51. Exophthalmic goiter.
  52. Addison's disease.
  53. Leukemia.
  54. Anemia, chlorosis.
  55. Other general diseases.
  56. Alcoholism, acute and chronic.
  57. Chronic lead poisoning.
  58. Other chronic poisonings of occupations.
  59. Other chronic poisonings.

II. Diseases of the nervous system and of the organs of special sense:
  60. Encephalitis.
  61. Simple meningitis.
  61. Repeated. Of which, epidemic cerebrospinal meningitis.
  62. Progressive locomotor ataxia.
  63. Other diseases of the spinal cord.
  64. Cerebral congestion and hemorrhage.
  65. Cerebral softening.
  66. Paralysis, cause unspecified.
  67. Paretic dementia.
  68. Other forms of insanity.
  69. Epilepsy.

II. Diseases of the nervous system and of the organs of special sense—Continued.
   70. Eclampsia, not puerperal.
   71. Convulsions of infants.
   72. Tetanus.
   73. Chorea.
   74A. Hysteria.
   74B. Neuralgia.
   74C. Other diseases of the nervous system.
   75. Diseases of the eyes and their adnexa.
   75. Repeated. Follicular conjunctivitis.
   75. Repeated. Trachoma.
   76. Diseases of the ears.
III. Diseases of the circulatory system:
   77. Pericarditis.
   78. Acute endocarditis.
   79. Organic diseases of the heart.
   80. Angina pectoris.
   81. Diseases of the arteries (atheroma, aneurism, etc.).
   82. Embolism and thrombosis.
   83. Diseases of the veins (varices, hemorrhoids, and phlebitis, etc.).
   84. Diseases of the lymphatic system (lymphangitis, etc.).
   85. Hemorrhage.
   86. Other diseases of the circulatory system.
IV. Diseases of the respiratory system:
   87. Diseases of the nasal fossæ.
   88. Diseases of the larynx.
   89. Diseases of the thyroid body.
   90. Acute bronchitis.
   91. Chronic bronchitis.
   92. Broncho-pneumonia.
   93. Pneumonia.
   94. Pleurisy.
   95. Congestion of the lungs and pulmonary apoplexy.
   96. Gangrene of the lung.
   97. Asthma.
   98. Pulmonary emphysema.
   99. Other diseases of the respiratory system (except phthisis).
V. Diseases of the digestive system:
   100. Diseases of the mouth and adnexa.
   101. Diseases of the pharynx.
   102. Diseases of the esophagus.
   103. Ulcer of the stomach.
   104. Other diseases of the stomach (except cancer).
   105. Diarrhea and enteritis (under 2 years of age).
   105. Repeated. Of which, chronic diarrhea.
   106. Diarrhea and enteritis (2 years and over).
   107. Intestinal parasites.
   108. Hernia, intestinal obstruction.
   109. Other diseases of the intestines.
   109. Repeated. Diseases of the anus and fecal fistula.
   110. Acute yellow atrophy of the liver.
   111. Hydatid tumor of the liver.
   112. Cirrhosis of the liver.
   113. Biliary calculi.
   114. Other diseases of the liver.
   115. Diseases of the spleen.
   116. Simple peritonitis (not puerperal).
   117. Other diseases of the digestive system (cancer and tuberculosis excepted).
   118. Appendicitis and abscesses of iliac fossa.
VI. Diseases of the genito-urinary system and adnexa:
   119. Acute nephritis.
   120. Bright's disease.
   121. Other diseases of the kidneys and adnexa.
   122. Urinary calculi.
   123. Diseases of the bladder.
   124. Diseases of the urethra, urinary abscess, etc.
   125. Diseases of the prostate.
   126. Nonvenereal diseases of the male genital organs.
   127. Metritis.

VI. Diseases of the genito-urinary system and adnexa—Continued.
- 128. Uterine hemorrhage (not puerperal).
- 129. Uterine tumor (not cancer).
- 130. Other diseases of the uterus.
- 131. Ovarian cysts and other tumors of the ovaries.
- 132. Other diseases of the female genital organs.
- 133. Diseases of the breast, not puerperal (except cancer).

VII. Puerperal state:
- 134. Accidents of pregnancy.
- 134. Repeated. Normal labor.
- 135. Puerperal hemorrhage.
- 136. Other accidents of labor.
- 137. Puerperal septicemia.
- 138. Puerperal albuminuria and eclampsia.
- 139. Puerperal phlegmasia alba dolens.
- 140. Other accidents of the puerperium, sudden death.
- 141. Puerperal diseases of the breast.

VIII. Diseases of the skin and cellular tissue:
- 142. Gangrene.
- 143. Carbuncle.
- 144. Phlegmon, acute abscess.
- 145A. Favus.
- 145B. Tænia tonsurans.
- 145C. Pelades.
- 145D. Scabies.
- 145E. Other diseases of the skin and adnexa.

IX. Diseases of the organs of locomotion:
- 146. Diseases of the bones (except tuberculosis).
- 147. Diseases of the joints (except tuberculosis and rheumatism)
- 148. Amputation.
- 149. Other diseases of the organs of locomotion.

X. Malformations:
- 150. Congenital malformations (stillbirths not included).

XI. Diseases of infancy:
- 150. Repeated. Births (children born in hospital).
- 151. Congenital debility, icterus, and sclerema.
- 152. Other diseases peculiar to infancy.
- 153. Lack of care.

XII. Diseases of old age:
- 154. Senile debility.

XIII. Affections produced by external causes:
- 155. Suicide by poison.
- 156. Suicide by asphyxia.
- 157. Suicide by hanging or strangling.
- 158. Suicide by drowning.
- 159. Suicide by firearms.
- 160. Suicide by cutting instruments.
- 161. Suicide by precipitation from height.
- 162. Suicide by crushing.
- 163. Suicide by other means.
- 164. Fractures.
- 165A. Sprains.
- 165B. Dislocations.
- 166. Other traumatic accidents.
- 167. Burns by fire.
- 168. Burns by corrosive substances.
- 169. Insolation.
- 170. Freezing.
- 171. Electrical shock.
- 172. Accidental drowning.
- 173A. Overwork.
- 173B. Inanition.
- 174. Absorption of deleterious gases, not suicidal.
- 175. Other acute poisons.
- 176. Other external violence.

XIV. Diseases ill defined:
- 177. Dropsy.
- 178. Sudden death.
- 179. Causes of death not specified or ill defined.

II NOMENCLATURE INTENDED FOR MORTALITY STATISTICS.

A. DETAILED NOMENCLATURE.

I. General diseases:

1. Typhoid fever (abdominal typhus).
2. Typhus fever.
3. Relapsing fever.
4. Intermittent fever and malarial cachexia.
4. Repeated. Malarial cachexia.
5. Smallpox.
6. Measles.
7. Scarlet fever.
8. Whooping cough.
9. Diphtheria and croup.
9. Repeated. Of which, diphtheria.
10. Influenza.
11. Miliary fever (sweating fever).
12. Asiatic cholera.
13. Cholera nostras.
14. Dysentery.
14. Repeated. Of which, epidemic dysentery.
15. Bubonic plague.
16. Yellow fever.
17. Leprosy.
18. Erysipelas.
19. Other epidemic diseases.
20. Pyemia and septicemia.
21. Glanders and farcy.
22. Anthrax (malignant pustule).
23. Rabies.
24. Actinomycosis, trichinosis, etc.
25. Pellagra.
26. Tuberculosis of the larynx.
27. Tuberculosis of the lungs.
28. Tuberculosis of the meninges.
29. Abdominal tuberculosis.
30. Pott's disease.
31. Cold abscess.
32. White swelling.
33. Tuberculosis of other organs.
34. General tuberculosis.
35. Scrofula.
36. Syphilis.
37. Gonorrhea (adults).
38. Gonococcal affections of infants.

39.	Cancer and other malignant tumors	of the buccal cavity.
40.		of the stomach, liver.
41.		of the peritoneum, intestines, rectum.
42.		of the female genital organs.
43.		of the breast.
44.		of the skin.
45.		of other organs, and unspecified.

46. Other tumors (except of the female genital organs).
47. Acute articular rheumatism.
48. Chronic rheumatism and gout.
49. Scurvy.
50. Diabetes.
51. Exophthalmic goiter.
52. Addison's disease.
53. Leukemia.
54. Anemia, chlorosis.
55. Other general diseases.
56. Alcoholism, acute and chronic.
57. Chronic lead poisoning.
58. Other chronic poisonings of occupations.
59. Other chronic poisonings.

II. Diseases of the nervous system and of the organs of special sense:
    60. Encephalitis.
    61. Simple meningitis.
    61. Repeated. Of which, epidemic cerebrospinal meningitis.
    62. Progressive locomotor ataxia.
    63. Other diseases of the spinal cord.
    64. Cerebral congestion and hemorrhage.
    65. Cerebral softening.
    66. Paralysis, cause unspecified.
    67. Paretic dementia.
    68. Other forms of insanity.
    69. Epilepsy.
    70. Eclampsia, not puerperal.
    71. Convulsions of infants.
    72. Tetanus.
    73. Chorea.
    74. Other diseases of the nervous system.
    75. Diseases of the eyes and their adnexa.
    76. Diseases of the ears.
III. Diseases of the circulatory system:
    77. Pericarditis.
    78. Acute endocarditis.
    79. Organic diseases of the heart.
    80. Angina pectoris.
    81. Diseases of the arteries (atheroma, aneurism, etc.).
    82. Embolism and thrombosis.
    83. Diseases of the veins (varices, hemorrhoids, and phlebitis, etc.).
    84. Diseases of the lymphatic system (lymphangitis, etc.).
    85. Hemorrhage.
    86. Other diseases of the circulatory system.
IV. Diseases of the respiratory system:
    87. Diseases of the nasal fossæ.
    88. Diseases of the larynx.
    89. Diseases of the thyroid body.
    90. Acute bronchitis.
    91. Chronic bronchitis.
    92. Broncho-pneumonia.
    93. Pneumonia.
    94. Pleurisy.
    95. Congestion of the lungs and pulmonary apoplexy.
    96. Gangrene of the lung.
    97. Asthma.
    98. Pulmonary emphysema.
    99. Other diseases of the respiratory system (except phthisis).
V. Diseases of the digestive system:
    100. Diseases of the mouth and adnexa.
    101. Diseases of the pharynx.
    102. Diseases of the esophagus.
    103. Ulcer of the stomach.
    104. Other diseases of the stomach (except cancer).
    105. Diarrhea and enteritis (under 2 years of age).
    105. Diarrhea and enteritis. Of which, chronic diarrhea.
    106. Diarrhea and enteritis (2 years and over).
    107. Intestinal parasites.
    108. Hernia, intestinal obstruction.
    109. Other diseases of the intestines.
    110. Acute yellow atrophy of the liver.
    111. Hydatid tumor of the liver.
    112. Cirrhosis of the liver.
    113. Biliary calculi.
    114. Other diseases of the liver.
    115. Diseases of the spleen.
    116. Simple peritonitis (not puerperal).
    117. Other diseases of the digestive system (cancer and tuberculosis excepted).
    118. Appendicitis and abscesses of iliac fossa.
VI. Diseases of the genito-urinary system and adnexa:
    119. Acute nephritis.
    120. Bright's disease.

VI. Diseases of the genito-urinary system and adnexa—Continued.
- 121. Other diseases of the kidneys and adnexa.
- 122. Urinary calculi.
- 123. Diseases of the bladder.
- 124. Diseases of the urethra, urinary abscess.
- 125. Diseases of the prostate.
- 126. Nonvenereal diseases of the male genital organs.
- 127. Metritis.
- 128. Uterine hemorrhage (not puerperal).
- 129. Uterine tumor (not cancer).
- 130. Other diseases of the uterus.
- 131. Ovarian cysts and other tumors of the ovaries.
- 132. Other diseases of the female genital organs.
- 133. Diseases of the breast, not puerperal (except cancer).

VII. Puerperal state:
- 134. Accidents of pregnancy.
- 135. Puerperal hemorrhage.
- 136. Other accidents of labor.
- 137. Puerperal septicemia.
- 138. Puerperal albuminuria and eclamsia.
- 139. Puerperal phlegmasia alba dolens.
- 140. Other accidents of the puerperium, sudden death.
- 141. Puerperal diseases of the breast.

VIII. Diseases of the skin and cellular tissue:
- 142. Gangrene.
- 143. Carbuncle.
- 144. Phlegmon, acute abscess.
- 145. Other diseases of the skin and adnexa.

IX. Diseases of the organs of locomotion:
- 146. Diseases of the bones (except tuberculosis).
- 147. Diseases of the joints (except tuberculosis and rheumatism).
- 148. Amputation.
- 149. Other diseases of the organs of locomotion.

X. Malformations:
- 150. Congenital malformations (stillbirths not included).

XI. Diseases of infancy:
- 151. Congenital debility, icterus and sclerema.
- 152. Other diseases peculiar to infancy.
- 153. Lack of care.

XII. Diseases of old age:
- 154. Senile debility.

XIII. Affections produced by external causes:
- 155. Suicide by poison.
- 156. Suicide by asphyxia.
- 157. Suicide by hanging or strangling.
- 158. Suicide by drowning.
- 159. Suicide by firearms.
- 160. Suicide by cutting instruments.
- 161. Suicide by precipitation from height.
- 162. Suicide by crushing.
- 163. Suicide by other means.
- 164. Fractures.
- 165. Dislocations.
- 166. Other traumatic accidents.
- 167. Burns by fire.
- 168. Burns by corrosive substances.
- 169. Insolation.
- 170. Freezing.
- 171. Electrical shock.
- 172. Accidental drowning.
- 173. Inanition.
- 174. Absorption of deleterious gases, not suicidal.
- 175. Other acute poisons.
- 176. Other external violence.

XIV. Diseases ill defined:
- 177. Dropsy.
- 178. Sudden death.
- 179. Causes of death, not specified or ill defined.

B. ABRIDGED NOMENCLATURE.

		Numbers corresponding to the detailed nomenclature.
1.	Typhoid fever (abdomanal typhus)	1
2.	Typhus fever	2
3.	Intermittent fever and malarial cachexia	4
4.	Smallpox	5
5.	Measles	6
6.	Scarlet fever	7
7.	Whooping cough	8
8.	Diphtheria and croup	9
9.	Influenza	10
10.	Asiatic cholera	12
11.	Cholera nostras	18
12.	Other epidemic diseases	3, 11, 14, 15, 16, 18, 19
13.	Tuberculosis of the lungs	27
14.	Tuberculosis of the meninges	28
15.	Other tuberculoses	from 26 to 34
16.	Cancer and other malignant tumors	from 39 to 45
17.	Simple meningitis	61
18.	Congestion, hemorrhage, and softening of the brain	64 and 65
19.	Organic diseases of the heart	79
20.	Acute bronchitis	90
21.	Chronic bronchitis	91
22.	Pneumonia	93
23.	Diseases of the stomach (except cancer)	103 and 104
24.	Diarrhea and enteritis (under 2 years)	105
25.	Hernia, intestinal obstruction	108
26.	Cirrhosis of the liver	112
27.	Nephritis and Bright's disease	119, 120
28.	Tumors (not cancers) and other diseases of the female genital organs	from 127 to 132
29.	Puerperal septicemia (puerperal fever, peritonitis, phlebitis)	137
30.	Other accidents of the puerperium, of pregnancy, and of labor	134, 135, 136, 138, 139, 140, 141
31.	Congenital debility and malformations	150, 151
32.	Senile debility	154
33.	Violent deaths	from 155 to 176
33	Violent deaths. Of which suicides	from 155 to 163
34.	Other diseases	17, 20, 21, 22, 23, 24, 25, 35, 36, 37, 38, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 62, 63, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 81, 82, 83, 84, 85, 86, 87, 88, 89, 92, 94, 95, 96, 97, 98, 99, 100, 101, 102, 106, 107, 109, 110, 111, 113, 114, 115, 116, 117, 118, 121, 122, 123, 124, 125, 126, 133, 142, 143, 144, 145, 146, 147, 148, 149, 152, 153
35.	Diseases not known or ill defined	from 177 to 180

III. NOMENCLATURE OF THE CAUSES OF INTRA-UTERINE DEATH.

I. Diseases of the mother:
  Syphilis.
  Other general diseases.
  Predisposition to abort.
  Albuminuria and other diseases peculiar to pregnancy.
  Traumatism and excessive work.
II. Diseases of the placenta and its envelopes (chorion, etc.).
III. Diseaseas of the fetus:
  Malformations (hydrocephalus, etc.).
  Premature births, etc.
IV. Accidents of labor:
  Malformations of the mother, etc.
  Bad presentation of the infant, etc.
  Displacement and compression of the cord, etc.
  Asphyxia.
V. Divers and not classified.
VI. Causes not specified or unknown.

EXPLANATION OF THE TITLES OF THE NOMENCLATURE OF DISEASES.

List showing the synonyms and diseases included under each title with references to the diseases which occur as complications of the principal diseases.

General Diseases.

I.—EPIDEMIC DISEASES.

1. Typhoid fever.—This title includes: Dothinenteritis, mucous, continued, enteric, attaxic or adynamic fever; abdominal typhus.

This title does not include: Adynamia (179), ataxo-adynamia (179).

Frequent complications: Pneumonia, pulmonary congestion, intestinal perforation, peritonitis, intestinal hemorrhage, sloughing, albuminuria.

2. Typhus.—This title includes: Petechial fever, petechial typhus.

This title does not include: Abdominal typhus (1).

Remark.—The word typhus without qualification will be taken in the sense that it is ordinarily understood in each country. For example, in the sense of "abdominal typhus" in the German language, and in the sense of "exanthematic typhus" in the French language; also in English.

3. Relapsing fever.—This title includes: Recurrent typhus.

4. Intermittent fever and malarial cachexia.—This title includes: Paludal fever, pernicious fever, acceso perniciosa, remittent fever, malaria, paludal cachexia, paludism, pernicious cachexia, paludal anemia.

4bis.—Of which malarial cachexia.

5. Smallpox.—This title includes: Variola, varioloid.

This title does not include: Varicella (19).

Frequent complications: Meningitis, endocarditis, suppuration, albuminuria.

6. Measles.—This title includes: Measly or rubeolar eruption.

This title does not include: Rubella (19).

Frequent complications: Bronchitis, broncho-pneumonia, etc.

7. Scarlet fever.—This title includes: Puerperal scarlatina, scarlatinal angina.

Frequent complications: Albuminuria, convulsions, edema of the glottis, hemorrhage, endocarditis, pericarditis, paralysis, diphtheria, eclampsia.

8. Whooping cough.—Frequent complications: Bronchitis, convulsions.

9. Diphtheria and croup.—This title includes: Diphtheritic, pseudo-membranous, infectious, malignant, or toxic anginas, diphtheria in all forms, and especially diphtheria of wounds, of the skin, of the conjunctiva, mouth, etc., pseudo-membranous bronchitis, pseudo-membranous laryngitis, malignant laryngitis, diphtheritic paralysis.

This title does not include: Stridulous croup (88), spasmodic croup (88), false croup (88).

Frequent complications: Pneumonia, albuminuria, paralysis.

9bis.—Of which, diphtheria.

10. Influenza.—This title includes: Grippal pneumonia, or pneumonia due to influenza, bronchitis or broncho-pneumonia due to influenza.

11. Miliary fever.—This title includes: Suette.

12. Cholera asiatica.—This title includes: Indian cholera, cholera (without qualification), epidemic cholera.

13. Cholera nostras.—This title includes: Sporadic cholera, cholerine, choleriform diarrhea, enteritis, etc.

This title does not include: Cholera infantum (105), antimonial cholera (175), hernial cholera (108).

Remark.—The words "cholera morbus" will be taken in the sense that it is ordinarily understood in each country: for example, in the sense of cholera nostras in the United States of America, and in the sense of Asiatic cholera in France and other countries.

14. Dysentery.—This title includes: Choleriform dysentery, dysentery of Cochin China or other tropical countries.

14bis.—Of which, epidemic dysentery.

15. Plague.—This title includes: Peste.

16. Yellow fever.—This title includes: Black vomit (vomito negro), fever amarilla.

17. Leprosy.—This title includes: Elephantiasis of the Greeks.

This title does not include: Elephantiasis arabum, i. e., elephantiasis of the Arabs (145E), Morvan's disease (63), syringomyelitis (63).

18. Erysipelas.—This title includes: All erysipelas, whether medical or surgical, and whatever its situation.

This title does not include: Gangrenous or phlegmonous erysipelas (144), erysipelatous phlegmon (144).

19. Other epidemic diseases.—This title includes: Mumps, rubeola, German measles, acrodynia, chicken pox (beriberi), and every other epidemic disease not specified in the nomenclature.

This title does not include: Epidemic dysentery (14bis), epidemic cerebrospinal meningitis.

REMARK.—Should one of these epidemic diseases break out, it will then be necessary to create here a provisional special title for it.

20. Pyemia and septicemia.—This title includes: Purulent infections, absorption of purulent matter, putrid infection, absorption of putrid matter, putrid fever, dissection wound, streptococcus infection of the blood (streptococchemia).

This title does not include: Puerperal septicemia (137), infectious fever (55).

REMARK.—Whenever the death of an adult female is reported as having occurred from septicemia, the certificate should be returned to the physician for statement whether the septicemia was or was not puerperal.

21. Glanders and farcy.

22. Anthrax.—This title includes: Malignant pustule, charbon.

23. Rabies.—This title includes: Hydrophobia.

This title does not include: Sitiophobia (68).

24. Actinomycosis, trichinosis, etc.—This title includes: Dystoma hepaticum, cysticercus.

This title does not include: Cysts or hydatic tumors of the liver (111), or of the lungs (99), intestinal parasites (107).

25. Pellagra.

26. Tuberculosis of the larynx.—This title includes: Tubercular laryngitis, laryngeal phthisis.

27. Tuberculosis of the lungs.—This title includes: Pulmonary tuberculosis, pulmonary phthisis (without qualification), phymatosis, tubercle of the lungs; acute, galloping, miliary tuberculosis or phthisis; granulations of the lungs (granulie); pulmonary cavities; consumption; caseous pneumonia; tubercular, bacillary, specific, granular, neoplastic or heteroplastic bronchitis or pneumonia; tubercular pleurisy; tubercular hemoptisis, tuberculosis (without qualification).

This title does not include: Hemoptisis (without qualification) (99), pulmonary hemorrhage (99), bronchorragia (without qualification) (99), pneumonie du sommet (apical pneumonia) (93), laryngeal phthisis (26), pulmonary anthracosis (99).

Frequent complications: Hemorrhage, pneumonia, pleurisy, persistent diarrhea.

REMARK.—See observation made under No. 93, relative to "pneumonie du sommet" (apical pneumonia).

28. Tuberculosis of the meninges.—This title includes: Tubercular meningitis, meningeal tuberculosis, granular, miliary, caseous, bacillary, specific, neoplastic, heteroplastic meningitis.

This title does not include: Meningitis (without qualification) even for infants (61).

29. Abdominal tuberculosis.—This title includes: Tubercular, granular, bacillary, specific, peritonitis; peritoneal tuberculosis; tubercular enteritis.

30. Pott's disease.—This title includes: Caries of the vertebra (mal vertébral), spine disease, polyarthritis vertebral.

Frequent complications: Cold abscess, paraplegia.

31. Cold abscess.—This title includes: Ossifluent abscess.

32. White swelling.—This title includes: Articular fungosity, coxalgia, scapulalgia.

33. Tuberculosis of other organs.—This title includes: Tuberculosis of the skin, lupus, tubercular nephritis, bacillary abscess, tubercular ulcer, tuberculosis of the bones.

This title does not include: Pott's disease (30).

34. General tuberculosis.—This title includes: Tuberculosis indicated simultaneously in two or more organs.

35. Scrofula.—This title includes: Lymphatism, scrofulide.

This title does not include: Scrofulous or lymphatic blepharitis, conjunctivitis, or keratitis (75).

36. Syphilis.—(*a*) Primary, (*b*) secondary, (*c*) tertiary, (*d*) hereditary. These divisions are only intended for the morbidity statistics.

This title includes: (*a*) Indurated or hand chancre, chancre of the mouth or of the face; (*b*) secondary—mucous plaques, amygdalitis, or angina ou laryngditis syphilitic; (*c*) tertiary—specific symptoms, gumma, ulcerations, exostosis, etc., syphilitic, osteocopic pains. Every disease with the qualification "syphilitic."

This title does not include soft chancre, simple or phagedenic chancre (36bis).

37bis. Soft chancre.—This title includes: Chancroid, phagedenic bubo, venereal, virulent bubo or bubo from absorption.

This title does not include: Chancre or syphilitic bubo (36A), chancre of the mouth (36A), scrofulous bubo (35), suppurating bubo (144), bubo of plague (15), bubo (without qualification) (144). This paragraph is for morbidity statistics only.

38. Gonorrhea (adults).—This title includes: Blennorrhagia, urethritis, balanitis, balanorrhagia, balanoposthitis, vaginitis, blennorrhagic or gonococcic cystitis, orchitis, bubos, arthritis, rheumatism, conjunctivitis of adults, ophthalmia of adults.

This title does not include: Vaginismus (132), vaginalitis (126).

Frequent complications: Bubo, adenitis, cystitis, orchitis.

38. Gonococcal affections of infants.—This title includes: Blenorrhagic or gonococcic conjunctivitis or ophthalmia in children under 5 years of age; gonococcic vulvitis of children under 5 years of age.

NOTE.—This heading is intended to include only the cases occurring in children under 5 years of age.

39. Cancer and other malignant tumors of the buccal cavity.—This title includes: Cancer of the mouth, of the lips, of the tongue, of the roof of the mouth, of the soft palate, cancer of the maxilla, epithelioma or carcinoma of these organs, cancer of smokers.

40. Cancer and other malignant tumors of the stomach, the liver.—This title includes: Cancer of the esophagus, cancer of the cardia, cancer of the pylorus, carcinoma or scirrhus, or colloid tumor, or encephaloid of these organs, gastro-carcinoma, tumor of the stomach.

This title does not include: Hematemesis (104).

NOTE.—In countries where the words "organic lesion of the stomach" are always synonymous with "cancer of the stomach," compile the bulletins having this diagnosis under paragraph No. 40. In countries, on the contrary where this is not constant, class under No. 104.

41. Cancer and other malignant tumors of the peritoneum, of the intestines, and of the rectum.—This title includes: Cancer of the colon, cancer of the anus, carcinoma or scirrhus, or encephaloid, or epithelioma of these organs; peritoneal cancer, cancerous peritonitis.

42. Cancer and other malignant tumors of the female genital organs.—This title includes: Cancer of the uterus or os, cancer of the ovary, cancer of the vagina, cancer of the vulva, carcinoma or scirrhus, or encephaloid, or colloid tumor, or heteromorphic, or neoplastic, or sarcomatous, or epithelioma of these organs.

43. Cancer and other malignant tumors of the breast.—This title includes: Carcinoma or scirrhus, or encephaloid, or colloid tumors, or heteromorphic, or neoplastic, or epithelioma of the breast of the mammæ.

44. Cancer and other malignant tumors of the skin.—This title includes: Epithelioma or epithelial tumor (without qualification), cancer of the ear, or of the face or cervico-facial. Noli me tangere.

This title does not include: Lupus (33), esthiomene (33).

45. Cancer and other malignant tumors of other organs, and unspecified.—This title includes: Abdominal cancer, pelvic cancer, cancer of the lung, of the kidney, of the bladder, of the prostate; cancerous goiter; sarcoma of the thyroid, sarcohydrocele, cancer of the bones, osteosarcoma, cancerous or sarcomatous tumors of the neck, carcinoma, or scirrhus, or encephaloid, or cancerous ulcer, or malignant tumor, or sarcoma, or malignant fungus of these organs, or organs not specified.

This title does not include: Cancer of the esophagus (40), cancer of the anus (41), cancer of the ovary, vagina, vulva (42).

46. Other tumors (tumors of the female genital organs excepted).—This title includes: Tumor (without qualification), abdominal tumor, intestinal tumor, vascular or erectile tumor, angioma, lymphoma, lymphadenoma, lymphatocele, adenoma, chondroma, osteoma, myoma, lipoma, sebaceous tumor, cystoma.

This title does not include: Cancer and its synonyms (40–45), tumor of the stomach (40), stercoral tumor (108), tumor of the uterus (129), hydatid tumor (111), cyst of the ovary (131), aneurismal tumor (81), varicose tumor (83), polypus of the ear (76), polypus of the nasal fossæ or naso-pharynx (87), uterine polypus (129).

47. Acute articular rheumatism.—This title includes: Rheumatic arthritis, rheumatic meningitis, abdominal or cerebral rheumatism, rheumatic vertigo, rheumatic endocarditis, or pericarditis, or pleurisy, or peritonitis.

This title does not include: Organic diseases of rheumatic origin (79, etc.), rheumatic iritis (75), rheumatic nodes (48), blennorrhagic rheumatism (37).

48. *Chronic rheumatism and gout.*—This title includes: Rheumatic nodes.

49. *Scurvy.*—This title includes: Werlhoff's disease.

50. *Diabetes.*—This title includes: Glycosuria.

Frequent complications: Pneumonia, furuncles, gangrene, hemorrhage or softening of the brain, tuberculosis.

51. *Exophthalmic goiter.*—This title includes: Exophthalmos, Basedow's disease, Grave's disease, exophthalmic cachexia.

Frequent complications: Hypertrophy of the heart, cachexia.

52. *Addison's disease.*—Frequent complications: Cachexia, ascites.

53. *Leukemia.*—This title includes: Adeno, leukemia, leucocythemia, Hodgkin's disease, pseudoleukemia.

Frequent complications: Hemorrhage, ascites, apoplexy, cachexia.

54. *Anemia chlorosis.*—This title includes: Pernicious anemia.

This title does not include: Cerebral anemia (74c).

55. *Other general diseases.*—This title includes: Autointoxication, infectious fever, virulent diseases (without other explanation), visceral steatosis, acromegalie, general amyloid or fatty degeneration.

56. *Acute or chronic alcoholism.*—This title includes: Drunkenness, ethylism, alcoholic intoxication, alcoholic delirium, alcoholic insanity, delirium tremens, absinthism, dipsomania.

This title does not include: Alcoholic cirrhosis (112), general alcoholic paralysis (67), atheroma (81), nor any other organic affections attributed to alcoholism, amblyopia by intoxication (75).

57. *Chronic lead poisoning.*—This title includes: Lead colic, saturnine colic, painters' colic, saturnine encephalopathy, saturnine paralysis, saturnism, all diseases qualified "saturnine."

58. *Other chronic poisonings of occupations.*—This title includes: The mercurial (hydrargyrismus) intoxications, phosphorous, arsenical, or other chronic intoxications when special mention is made by the physician, or in default of this information when the profession of the diseased indicates very clearly that the intoxication is professional. In default of one of these two indications, compile the bulletin under heading No. 59.

Phosphorous necrosis is always professional.

59. *Other chronic poisonings.*—(See observation made under the preceding paragraph 58). This title includes: Morphinism, cocainism, chronic ergotism.

This title does not include: Amblyopia by intoxication (75).

II.—DISEASES OF THE NERVOUS SYSTEM AND THE ORGANS OF SENSE.

60. *Encephalitis.*—This title includes: Brain fever.

61. *Simple meningitis.*—This title includes: Meningitis (without qualification), meningo-encephalitis, pachymeningitis, epidemic cerebrospinal meningitis.

61 *bis.*—Of which, epidemic cerebrospinal meningitis.

This title does not include: Tubercular meningitis, and all its synonyms (28), rheumatic meningitis (47).

62. *Progressive locomotor ataxia.*—This title includes: Duchenne's disease.

63. *Other diseases of the spinal cord.*—This title includes: Diseases of the cord, multiple sclerosis, symmetrical sclerosis, lateral sclerosis, sclerosis (without qualification), Charcot's disease, Morvan's disease, syringomyelia, tabes dorsalis spasmodica, hemorrhage of the spinal cord, hematomyelia, hematorrachis, myelitis, congestion of the medulla, affections of the bulb, bulbar paralysis, spinal paralysis, paralysis agitans, shaking palsy, ascending paralysis, infantile paralysis, fatty or amyloid degeneration of the cord, Parkinson's disease, Friedreich's disease, compression of the medulla or of the cord, progressive muscular atrophy, fatty degeneration of the muscles, atrophic muscular paralysis, amyotrophia, amyotrophic paralysis, atrophic paralysis, pseudo-hypertrophic paralysis.

64. *Cerebral congestion and hemorrhage.*—This title includes: Apoplexy, cerebral apoplexy, meningeal apoplexy, serous apoplexy, cerebral atheroma, edema of the brain, cerebral extravasation, hemorrhage of the cerebellum, meningeal hemorrhage, apoplectic insanity.

Frequent complications: Hemiplegia, paralysis.

65. *Cerebral softening.*—This title does not include: Senile dementia (154).

Frequent complications: Hemiplegia, paralysis, pulmonay congestion.

66. *Paralysis cause unspecified.*—This title includes: Paralysis (without qualification), hemiplegia, facial paralysis, general paralysis (do not confuse with paretic dementia).

This title does not include: Diphtheritic paralysis (9), paralysis of muscular atrophy (63), pseudo-hypertrophic paralysis (63), general paralysis (67), paralytic cachexia or marasmus (67), paralytic insanity or madness (67), paralysis agitans or shaking palsy (63), paralysis of the bulb (63), ascending paralysis (63), infantile paralysis (63), labio-glossy-laryngeal paralysis (74c), paralysis of the soft palate (101), paralysis of the muscles of the eye (53).

67. *Paretic dementia.*—This title includes: Paralytic insanity, paralytic madness, paralytic cachexia, paralytic marasmus, diffuse meningo-encephalitis, diffuse periencephalitis.

This title does not include: General paralysis (66).

68. *Other forms of insanity.*—This title includes: Dementia, insanity, mental unsoundness, halluncinations, mania, megalomania, monomania, delusions of persecution, melancholia, lypemania, hypochondria, spleen, nosomania, nosophobia, necrophobia, sitophobia, lycanthropy, nostalgia, homesickness, andromania, nymphomania, priapism, satyriasis, mental disease.

This title does not include: Alcoholic dementia or delirium tremens or alcoholic delirium (56), delirium (179), uremic delirium (120), apopletic dementia (64), paralytic dementia (67), choreic dementia (73), senile dementia (154), hysteria (74a).

69. *Epilepsy.*—This title includes: Haut mal, Hercules' disease, mal comitial.

This title does not include: Epileptiform convulsions (70).

70. *Eclampsia* (*not puerperal*).—This title includes: Epileptiform convulsions of adults.

This title does not include: Scarlatinal eclampsia (7), uremic eclampsia (120), eclampsia of infants, convulsions of infants (71).

NOTE.—When an adult female is designated as having been attacked with eclampsia without further explanation, return the bulletin to the physician in order that he may specify whether the disease is or is not puerperal.

71. *Convulsions of infants.*—This title includes: Eclampsia of infants, infantile spasms.

This title does not include: Trismus neanotorum (72).

NOTE.—This title includes only children under 5 years.

72. *Tetanus.*—This title includes: Opisthotonos, emprosthotonos, plurosthotonos, trismus of the new born, trismus neanotorum.

73. *Chorea.*—This title includes: *Choreic* dementia, Bergeron's disease.

74a. *Hysteria.*—This title includes: Hysterical anorexia, hysterical colic; every affection qualified "Hysteric." (For morbidity statistics only.)

74b. *Neuralgia.*—This title includes: Tic douloureux, sciatica. (For morbidity statistics only.)

74c. *Other diseases of the nervous system.*—This title includes; Cerebral compression, cerebral tumor, acquired hydrocephalus, neuroma, encephalopathy (without qualification), idiocy, imbecility, cretinism, gatism, amnesia. paramnesia, loss of speech, aphasia, affections of the brain or nerves, cerebral anemia, neurosis, tic, tic convulsif, contractures, anesthesia, neurasthenia, migraine, vertigo, somnambulism, catalepsy, bulimia, Landry's disease, symptomatic or Jacksonian epilepsy, athetosis labio-glosso-laryngeal paralysis, fatty or amyloid degeneration of the nervous system.

This title does not include: Dementia or imbecility or senile debility (154), syringomyelia (63), myxedema (89), pachydermic cachexia (98), congenital hydrocephalus or without qualification (150).

75. *Diseases of the eyes and their adnexa.*—This title includes: Ophthalmia, foreign bodies, conjunctivitis (not including diphtheritic conjunctivitis), pterygium, keratitis of all kinds, staphyloma, diseases of the cornea, diseases of the sclerotic, diseases of the iris, iritis, diseases of the choroid, choroiditis, iridochoroiditis, sclero-choroiditis, glaucoma, diseases of the retina, retinitis, optic neuritis, amaurosis, amblyopia, toxic amblyopia, hemiopia, hemeralopia, nyctalopia, diseases of the lens, cataract, aphakia, parasites of the eye, ophthalmozoaires, coloboma, strabismus, strabotomy, paralysis of the muscles of the eye, nystagmus, orgeolet, chalazion, blepharitis, blepharo-conjunctivitis, scrofulous-blepharitis, blepharophimosis, blepharoplasty, ectropion, entropion, trichiasis, dacryoadenitis, diseases of the lachrymal glands and lachrymal canals, dacryocystitis, dacryolithiasis, dacryoma, lachrymal fistula, diseases or tumors of the orbit (except cancer).

This title does not include: Diphtheritic conjunctivitis (9), cancer of the eye (45), ocular tuberculosis (33), exophthalmic goiter (51), exophthalmia (51).

75 *bis. Follicular conjunctivitis.*—(For morbidity statistics only.)

75 *ter. Trachoma.*—(For morbidity statistics only.)

76. *Diseases of the ears.*—This title includes: Otitis, otorrhea, catarrh of the ear, hydrotitis, foreign bodies in the external auditory meatus, obstruction of the auditory canal, polypus of the ear, inflammation of the tympanum, vertigo ab

aure læso, Menière's disease or vertigo, caries of the petrous portion of the temporal bone, deafness, deaf-mutism.

This title does not include: Mumps (19).

III. DISEASES OF THE CIRCULATORY SYSTEM.

77. Pericarditis.—This title includes: Cardiopericarditis, hydropericardium, hydropneumopericardium, cardiac adhesions.

This title does not include: Rheumatic pericarditis (47), endopericarditis (78), pleuropericarditis (94), pneumopericarditis (93).

78. Acute endocarditis.—This title includes: Endocarditis (without qualification), acute myocarditis, or without qualification, endopericarditis.

This title does not include: Rheumatic endocarditis or other acute cardiac affections occurring during an attack of rheumatism (47).

79. Organic diseases of the heart.—This title includes: Aortic, mitral, tricuspid, cardiac or valvular affections or lesions, insufficiency or stenosis, cardiac cachexia, hypertrophy of the heart, dilatation of the heart, cardiectasis, steatosis of the heart, degeneration of the heart, cardiopathy, cardiac sclerosis, cardiovascular sclerosis, cardiomalacia, cardiostenosis, persistent foramen ovale, tachycardia, rupture of the heart, cardiorrhexis, palpitations of the heart, asystole, cardiac asthma.

This title does not include: Cardiac affections of undetermined character (86), persistence of the foramen ovale (150).

Frequent complications: Dropsy, bronchitis and pneumonia, albuminuria, embolism, thrombosis.

80. Angina pectoris.—This title includes: Cardialgia, sternalgia, neuralgia of the heart.

81. Diseases of the arteries, atheroma, aneurism, etc.—This title includes: Arteritis, fatty degeneration of the arteries, arteriosclerosis, arterial atheroma, arteriectasis, aortic ectasis, Hodgson's disease, stenosis of the pulmonary artery, aortitis, aneurismal tumor.

This title does not include: Aortic valve diseases (79).

82. Embolism and thrombosis.—This title includes: Thrombosis (not puerperal), phlegmasia alba dolens (nonpuerperal),

This title does not include: Puerperal emboli (140).

83. Affections of the veins (varices, hemorrhoids, phlebitis, etc).—This title includes: pneumophlebitis, varicose ulcer, varicocele.

This title does not include: Puerperal phlebitis (137), vascular or erectile tumor (46), angioma (46).

84. Diseases of the lymphatic system (lymphangitis, etc.).—This title includes: Angioleucitis, adenopathia, lymphangitis.

This title does not include: Suppurating adenitis (144), plegmonous adenitis (144), leukemic adenoma (53), lymphatismus (35), bubo (36 bis), adenoma (46), lymphoma (46), lymphadenoma (46).

85. Hemorrhage.—This title includes: Hemorrhage (without qualification), internal hemorrhage, hemophilia, epistaxis, stomatorrhagia, cutaneous hemorrhage, purpura hemorrhagica.

This title does not include: Cerebral hemorrhage (64), cerebellar hemorrhage (64), meningeal hemorrhage (64), pulmonary hemorrhage (99), hemoptysis (99), hematemesis (104), intestinal hemorrhage (109), hematuria (121), uterine hemorrhage (135 or 128, according to whether it is puerperal or not), metrorrhagia (128 or 125), umbilical hemorrhage (152), traumatic hemorrhage (166).

86. Other diseases of the circulatory system.—This title includes: Cardiac affections (not determined), angiectasis, angiectopia, affections of the large vessels, permanent slow pulse.

This title does not include: Vascular nevus (150).

IV. DISEASES OF THE RESPIRATORY SYSTEM.

87.—Diseases of the nasal fossæ.—This title includes: Coryza, "cold," polypus of the nasal fossæ or nasopharynx, ozena, abscess of the nasal fossæ, adenoid vegetations.

This title does not include: Epistaxis (85), syphilitic coryza.

88. Diseases of the larynx.—This title includes: Acute, chronic, erysipelatous, edematous, phlegmonous, stridulous, etc., laryngitis; aphonia, extinction of the voice, false croup, spasmodic croup, stridulous croup, edema of the glottis, spasm of the glottis, polypus of the larynx, stenosis of the larynx, laryngotomy.

This title does not include: Tubercular laryngitis (26), laryngeal tuberculosis

(26), tubercular phthisis (26), croup (9), diphtheritic laryngitis and its synonyms (8), foreign bodies in the larynx (176).

89. Diseases of the thyroid body.—This title includes: Goiter, thyreocele, myxedema, pachydermic cachexia.

90. Acute bronchitis.—This title includes: Capillary bronchitis, trachitis, tracheobronchitis, broncho-alveolitis.

This title does not include: Broncho-pneumonia (92), specific bronchitis, nor any other synonym for tuberculosis of the lungs (see note under 27), fetid bronchitis (96), hay fever (99). (See note made under No. 91.)

91. Chronic bronchitis.—This title includes: Pituitary bronchitis, pituite, catarrh (without qualifiation), bronchial, pituitary, pulmonary or suffocating catarrh, bronchorrhea, dilatation of the bronchi, bronchiectasis.

This title does not include: Fetid bronchitis (96), tubercular bronchitis (27).

NOTE.—Return bulletins to the physician when the word bronchitis is not followed with an explanation—that is to say, whether it is acute or chronic. When the physician neglects to respond, compile the bulletin under No. 91, or, if under 5 years of age, under No. 90.

92. Broncho-pneumonia.—This title includes: Catarrhal pneumonia.

This title does not include: Capillary bronchitis (90).

93. Pneumonia.—This title includes: Croupous pneumonia, pleuropneumonia, pneumopleuritis, splenopneumonia, pneumonie du sommet, peripneumonia, pneumopericarditis, typhoid pneumonia.

This title does not include: Caseous, specific, bacillary pneumonia, nor any other synonym of tuberculosis of the lungs (see No. 27); pulmonary congestion (95).

NOTE.—In countries where the words "pneumonie du sommet"—i. e., pneumonia of the apex—are always synonymous with phthisis, class the bulletin carrying this diagnosis under No. 27. In the countries, on the contrary, where this is not always the case class under No. 93.

94. Pleurisy.—This title includes: Pleuritis, pleuropericarditis, thoracic or pleuritic effusion, pneumothorax, hydropneumothorax, pyothorax, pleural abscess, pneumopyothorax, hemothorax, thoracentesis, empyema, pulmonary adhesion.

This title does not include: Pleurodynia (99).

95. Congestion of the lungs and pulmonary apoplexy.—This title includes: Edema of the lungs.

96. Gangrene of the lung.—This title includes: Fetid bronchitis.

97. Asthma.—This title does not include: Cardiac asthma (79), suffocating catarrh (91), hay fever (99).

98. Pulmonary emphysema.—This title includes: Emphysema (without qualification).

This title does not include: Subcutaneous emphysema (145e).

99. Other diseases of the respiratory system (except phthisis).—This title includes: Tracheostenosis, pleurodynia, pneumopathy, hydatids of the lung, pulmonary calculi, abscess of the lungs, pulmonary anthracosis, interstitial pneumonia, cirrhosis of the lungs, pulmonary sclerosis, hay fever.

NOTE.—Include also under this heading the following diseases when their nature is not indicated: Organic lesion of the lung, pulmonary affections, hemoptysis, spitting of blood, pulmonary hemorrhage, pneumorrhagia, bronchorrhagia, tracheotomia.

This title does not include: Cancer of the lung (45).

V.—DISEASES OF THE DIGESTIVE SYSTEM.

100. Diseases of the digestive system.—This title includes: Stomatitis, diseases of the gums, epulis, gingivitis, bleeding from the gums, glossitis, diseases of the tongue (except cancer), parotid tumor, parotitis, salivary fistula, ranula, thrush, diseases of the teeth, odontalgia, dental caries, staphylitis, staphyloplasty, staphylorraphy.

This title does not include: Cancer of the lips and of the tongue (39), cancer of the mouth (36a), noma (142), mumps (19), gangrene of the mouth (142), diseases of the palate (146 or 36), fracture of the maxilla (146), necrosis of the maxilla (146), paralysis of the soft palate (101).

101. Diseases of pharynx.—This title includes: Angina or Ludwig's disease, angina of every nature (except diphtheritic angina and its synonyms; see the note under diphtheria No. 9), amygdalitis, quinsy, abscess of the throat, of the retropharynx, of the pharynx, paralysis of the soft palate, elongation of the uvula, pharyngitis.

This title does not include: Angina pectoris (80), cardiac angina (80), scarlatinous angina (7).

102. Diseases of the esophagus.—This title includes: Foreign bodies in the esophagus, lesion of the esophagus, stenosis of the esophagus (except cancer), spasm of the esophagus, esophagotomy.

This title does not include: Cancer of the esophagus (40), syphilitic stenosis of the esophagus (36).

103. Ulcer of the stomach.—This title includes: Ulcus rotundum or round ulcer of the stomach.

Frequent complications: Hematemesis, perforation of the stomach, peritonitis.

104. Other diseases of the stomach (except cancer).—This title includes: Dilatation of the stomach, paresis of the stomach, dyspepsia, apepsia, gastritis, gastrohepatitis, foreign bodies in the stomach, gastrotomy, nontraumatic perforation of the stomach, gastralgia, vertigo a stomaco lœso, catarrh of the stomach, gastrorrhea, indigestion.

Also include under this heading the following diseases when their nature is not indicated: Gastrorragia, hematemesis, hemorrhage from the stomach.

NOTE.—See observation made under No. 40 relative to organic lesion of the stomach.

This title does not include: Gastroenteritis (105 or 106, depending on the age).

105. Diarrhea and enteritis (under 2 years of age).—This title includes: Gastroenteritis, or gastrocolitis of infants, infantile enteritis, cholera infantum, athrepsia.

NOTE.—Class under this title only infants under 2 years of age.

105 bis—of which: Chronic diarrhea.

This title includes: Athrepsia.

106. Diarrhea and enteritis (2 years and over).—This title includes: Gastroenteritis, or gastrocolitis of adults, enteritis of adults, diarrhea of adults, lientery, intestinal ulcerations, colitis, intestinal colic, colic of flatulency, inflammatory colic.

This title does not include: Tubercular enteritis (29).

107. Intestinal parasites.—This title includes: Helminthes, oxyures, tenia, tenia solium, ascaris lumbricoides, cœnurus, trematoda, trichocephalus, ankylostoma, worm colic.

108. Hernia, intestinal obstruction.—This title includes: Internal strangulation, intestinal invagination, stercoral tumors, ileus, intestinal occlusion, volvulus, hernial cholera, hernial gangrene.

Include under this heading the following operations when their nature is not indicated: Merocele, sarcoëpiplocele, sarcoëpiplomphalus, kelotomy, herniotomy, artificial anus, stercoral vomiting.

This title does not include: Laparotomy (without other indication) (46).

Frequent complications: Peritonitis.

109. Other diseases of the intestines.—This title includes: Paralysis or paresis of the intestines, enteroptosis, constipation, stercoral fever, intestinal calculi, intestinal perforation, foreign bodies in the intestine or rectum, rectitis.

Also include under this heading the following diseases and operations when their nature is not indicated: Enterotomy, artificial anus, enterorrhagia, intestinal hemorrhage, melena, prolapse of the rectum, stenosis of the rectum.

This title does not include: Stercoral tumor (108), intestinal invagination and its synonyms (108), typhlitis (118), perityphlitis (118).

109 bis. Diseases of the anus and fecal fistula.—This title includes: Proctitis, periproctitis, proctocele, proctoptosis, fissure of the anus, abscess of the margin of the anus, fistula in ano or stercoral or recto-vaginal.

This title does not include: Urinary fistulas, even when they connect with the rectum (124), artificial anus (108) (for morbidity statistics only), imperforate anus (150) (for morbidity statistics only).

110. Pernicious icterus.—This title includes: Icterus gravus, acute yellow atrophy of the liver, parenchymatous hepatitis, Weil's disease.

This title does not include: Icterus or jaundice (without qualification) (114), chronic icterus (114), icterus of the new-born, *Icterus neonatorum* (151).

111. Hydatid tumors of the liver.—This title includes the following diseases when their location is not indicated: Hydatid cyst, hydatids, echinococcus.

112. Cirrhosis of the liver.—This title includes: Cirrhosis (without qualification), alcoholic cirrhosis, interstitial cirrhosis, biliary cirrhosis, amyloid or fatty degeneration of the liver, slow atrophy of the liver, steatosis of the liver, alcoholic, interstitial or alcoholic hepatitis.

This title does not include: Organic lesion of the liver (114), hypertrophy of the liver (114).

Frequent complications: Dropsy, hemorrhage, pneumonia, tuberculosis.

113. Biliary calculi.—This title includes: Hepatic calculi, biliary lithiasis, hepatic colic.

114. Other diseases of the liver.—This title includes: Abscess of the liver, hepatitis, acute hepatitis, angiocholitis, cholecystitis, hepatocystitis, choluria.

Also include under this heading the following diseases when their nature is not indicated: Organic lesion of the liver, tumor of the liver, hypertrophy of the liver, acholia, cholemia, icterus, chronic icterus, jaundice, hepatic congestion.

This title does not include: Pernicious icterus (110), icterus neonatorum (151).

115. Diseases of the spleen.—This title includes: Splenitis, splenopathy, megalosplenia, splenocele.

This title does not include: The diseases of the spleen due to leukemia or to malaria.

116. Simple peritonitis (not puerperal).—This title includes: Peritonitis (without qualification), chronic peritonitis, peritoneal adhesions, epiploitis, metroperitonitis, pelviperitonitis.

This title does not include: Tubercular peritonitis (29), cancer of the peritoneum (41), puerperal peritonitis (137), rheumatic peritonitis (47).

NOTE.—When an adult female is designated as having been attacked with peritonitis, without other explanation, return the bulletin to the physician in order that he may specify whether the disease was puerperal or not.

117. Other diseases of the digestive system (cancer and tuberculosis excepted).—This title includes: Diseases of the pancreas (except cancer).

118. Appendicitis and abscesses of the iliac fossa.—This title includes: Iliac phlegmon or abscess, typhlitis, perityphlitis, typho-dicliditis, appendicitis.

This title does not include: Abscess of the pelvis (130), periuterine abscess (130), pelvic suppuration (130).

VI.—DISEASES OF THE GÉNITO-URINARY SYSTEM AND ADNEXA.

119. Acute nephritis.—This title does not include: Scarlatinal nephritis (7), chronic nephritis (120), tubercular nephritis (33), nephritis of pregnancy (138).

120. Bright's disease.—This title includes: Chronic albuminous, interstitial or parenchymatous nephritis, albuminuria, amyloid or fatty degeneration of the kidneys, amyloid kidney, steatosis of the kidneys, renal sclerosis.

Also include under this heading the following diseases when their nature is not indicated: Uremia, uremic eclampsia, uremic delirium, uremic coma.

This title does not include: Organic lesions of the kidney (121), puerperal uremia (128), cardiac albuminuria (79).

Frequent complications: Anasarca, dropsy, convulsions, hemorrhages, cerebral apoplexy, pneumonia.

121. Other diseases of the kidneys and their adnexa.—This title includes: Pyelitis; anuria; renal congestion; renal ectopia; nephroptosis; floating, movable, or displaced kidneys; mobility of the kidney; renal cysts; multiple cysts of the kidney; hydronephrosis; hematuria; perinephritis; perinephritic abscess; pyelonephritis; nephropyosis.

Also include under this heading the following diseases when their nature is not indicated: Organic lesion of the kidneys, nephorrhagia.

122. Urinary calculi.—This title includes: Renal, urethral, nephritic, vesical or urinary calculi; nephritic colic; nephrolithiasis; gravel; stone; urinary lithiasis; lithotrity; lithoclasty.

This title does not include: Prostatic calculi (125).

123. Diseases of the bladder.—This title includes: Acute or chronic cystitis, vesical or urethral catarrh, cystorrhagia, tumor of the bladder, cystocele, cystoptosis, foreign bodies in the bladder, cystotomy, retention of urine, dysruria, paralysis of the bladder, vesical inertia, incontinence of urine, tenesmus of the bladder.

This title does not include: Hematuria (121); urinary fistulas, even when they are connected with the bladder (124); cystosarcoma (45).

124. Other diseases of the urethra, urinary abscess, etc.—This title includes: Ankylurethritis, stricture, foreign bodies, urethrotomy, urinary fistula (urethral, or urethrorectal, or recto-vesical, or vesico-vaginal, or vesico-metro-rectal), urinary infiltration, urinary intoxication, urethralgia, urethrorrhagia, urinemia, urethrostenia, urethroplasty, urethrorrhaphy.

This title does not include: Urethral catarrh (123), retention of urine (123).

125. Diseases of the prostate.—This title includes: Hypertrophy of the prostate, prostatitis, abscess of the prostate, prostatic calculi.

This title does not include: Cancer of the prostate (45), tuberculosis of the prostate (33).

126. Nonvenereal diseases of the male genital organs.—This title includes: Phimosis; paraphimosis; amputation of the penis; seminal loss; spermatorrhea; orchitis; epididymitis; funiculitis; vaginalitis; hydrocele; hematocele of the testicle, of the cord, of the scrotum; castration (in males); Malassez's disease.

This title does not include: Cancer of the testicle (45), tubercle of the testicle (33), varicocele (85), sarcohydrocele (45), syphilitic sarcocele (36), spermatorrhea, varicocele (83).

127. Metritis.—This title includes: Ulcer of the uterus, ulcerations of the neck.

128. Uterine hemorrhage (not puerperal).—This title includes: Metorrhagia, menorrhagia, tamponnement of the vagina or of the uterus.

129. Uterine tumor (not cancer).—This title includes: Uterine fibroma, fibrous tumor or fibroid bodies of the uterus, hysteromyoma, uterine polypus, fungus or fungosities of the uterus.

130. Other diseases of the uterus.—This title includes: Ulcerations of the neck; uterine or vaginal catarrh; deviation or antiflexion, retroflexion or antiversion, or retroversion, or falling down or prolapse of the uterus; prolapse of the vagina; elongation of the uterus; amenorrhea; hypertrophy of the neck of the uterus; dysmenorrhea; organic lesion of the uterus; hysterectomy; hysterotomy; metrotomy; ablation of the uterus; pelvic abscess; periuterine abscess or phlegmon or recto-uterine; pelvic suppuration; Huguier's disease; leucorrhea; "whites;" vaginal discharge.

This title does not include: Puerperal diseases, abscess of the iliac fossa (95).

131. Ovarian cysts and other tumors of the ovary.—This title includes: Ovariotomy, castration (in the female).

132. Other diseases of the female genital organs.—This title includes: Vaginismus, tumor of the vagina, ovaritis, salpingitis, salpinx, metrosalpingitis, hematosalpinx, pyosalpinx, abscess and cysts of the vulvo-vaginal glands, vulvitis, periuterine hematocele or retro-uterine.

This title does not include: The urinary fistulas (124) and the fecal fistulas (109 bis), even though they be connected with the genital organs.

133. Diseases of the breast, not puerperal (cancer excepted).—This title includes: Mammitis, abscess of the breast (not puerperal), cyst of the breast, cystic disease of Reclus, tumor of the breast (not cancer or without indication), amputation of the breast.

This title does not include: Mammary fistula (puerperal or without indication) (141), cancerous tumor of the breast (43).

VII.—PUERPERAL CONDITION.

NOTE.—It sometimes happens that the physician neglects to note the character of the puerperal disease. In this case employes whose duty it is to compile the statistics will be guided by the following: "In every case in which an adult female is reported as having died of a disease which might be of a puerperal character, the certificate of death should be returned to the signer for explanation as to whether the disease was puerperal or not. These diseases are the following: Peritonitis, pelviperitonitis, metroperitonitis, septicemia, hemorrhage, metrorrhagia, eclampsia, phlegmasia alba dolens, phlebitis, lymphangitis, embolus, sudden death, abscess of the breast."

134. Accidents of pregnancy.—This title includes: Abortion or miscarriage (death of the mother), hemorrhage during pregnancy, uncontrollable vomiting, rupture of tubal pregnancy, ablation of the gravid tube, troubles and fatigues intervening in the course of pregnancy.

134 bis. Normal labor.—(For morbidity statistics only.)

135. Puerperal hemorrhage.—This title includes: Puerperal metrorrhagia.

136. Other accidents of labor.—This title includes: Dystocia, Cesærian operation, rupture of the uterus, metrorrhexia, tearing or rupture of the perineum, perineorrhaphy, placenta prævia, malposition or retention or detachment or apoplexy of the placenta, cephalotripsy, embryotomy (adult female), symphiseotomy, version, application of the forceps, uterine inversion.

137. Puerperal septicemia.—This title includes: Puerperal fever; puerperal infection; puerperal endometritis; puerperal salpingitis; perimetro-salpingitis, or phlegmon (abscess) of the broad ligament or diffuse puerperal pelvic cellulitis; peritonitis, or metroperitonitis, or phlebitis, or lymphangitis, or puerperal pyohemia.

This title does not include: Septicemia (without qualification) (20).

138. Puerperal albuminuria and eclampsia.—This title includes: Puerperal uremia, nephritis of pregnancy, eclampsia gravidarium, epileptiform convulsions of women in pregnancy, puerperal tetanus.

139. Puerperal phlegmasia alba dolens.—Frequent complications: Gangrene, emboli.

This title does not include: Nonpuerperal phlegmasia alba dolens (82).

140. Other accidents of the puerperium—sudden death.—This title includes:

Puerperal emboli, puerperal thrombosis, puerperal sudden death, results of labor (without other explanation).

This title does not include: Sudden death (nonpuerperal) (178), puerperal scarlatina (7).

141. Puerperal diseases of the breast.—This title includes: Fissure of the nipple (puerperal), abscess of the breast, fistula of the breast (puerperal or without indication).

VIII.—DISEASES OF THE SKIN AND THE CELLULAR TISSUE.

142. Gangrene.—This title includes: Mortification, sphacelus, dry or senile gangrene of the extremities, gangrene of the mouth, gangrene of the vulva, etc., noma, Raynaud's disease.

This title does not include: Gangrene of the lungs (96), hernial gangrene (108), erysipelatous gangrene (144).

143. Carbuncle.—This title does not include: Boil or button of Biskra, alep or medina, ulcer of pendine.

NOTE.—The word "anthrax" will be taken in the sense that it is ordinarily understood in each country: for example, in French, in the sense of "an aggregation of pustules or furuncles (143)," and in Russia and other countries, in the sense of "malignant pustule" (22).

144. Phlegmon, acute abscess.—This title includes: Abscess (without qualification), phlegmonous tumor, adenophlegmon, suppurating adenitis, bubo (without qualification), suppurating bubo, diffuse phlegmon, phlegmonous or gangrenous erysipelas, gangrenous or erysipelatous phlegmon, panaris, paronychia, mediastinal abscess, pus cavity (without other indication).

This title does not include: Abscess bacillaire (tuberculosis) (33); abscess of the pharynx or of the throat or retropharynx (101), of the liver (114), of the iliac fossa (118), of the pelvis (130), of the prostate (135), urinary (124), periuterine (130), of the breast (nonpuerperal) (133), of the breast (puerperal) (141), cold (31), ossifluent (31), angioleucitis (84).

145a. Favus-tinea favosa.—(For morbidity statistics only).

145b. Tinea tonsurans, trichophytosis.—This title includes: Tinea (without qualification). (For morbidity statistics only.)

145c. Pelada.—(For morbidity statistics only).

145d. Scabies.—(For morbidity statistics only).

145e. Other diseases of the skin and its adnexa.—This title includes: Erythema, urticaria, prurigo, phthiriasis, lichen, pityriasis, psoriasis, dermatitis, eczema, impetigo, aphta, herpes, ecthyma, elephantiasis arabum, pachydermia, polysarcia, sclerodermia, keloids, mycosis fungoides, seborrhea, trophoneurosis, zona, herpes zoster, Wardrop's disease, pemphigus.

This title does not include: Pachydermic cachexia (89), elephantiasis of the Greeks (17).

IX.—DISEASES OF THE ORGANS OF LOCOMOTION.

146. Diseases of the bones (except tuberculosis).—This title includes: Periostitis, periostosis, ostitis, osteoperiostitis, osteomyelitis, caries, necrosis, sequestrum, perforation of the palate, necrosis of the maxillary bones (not due to phosphorus and without indication), exostosis (without qualification), osteoma, osseous tumor, tumor of the skull, foreign bodies in the frontal sinus, maxillary sinus, etc., osteomalacia, softening of bones, rachitis, scoliosis, lordosis, cyphosis.

This title does not include: Caries of the petrous portion of the temporal bone (76), dental caries (100), osteocopic pains (36c), osteosarcoma (45), phosphorus necrosis (58).

147. Diseases of the joints (except tuberculosis and rheumatism).—This title includes: Arthritis, polyarthritis (nonvertebral), hydarthrosis, foreign bodies in the articulation, arthrodynia, arthropyosis, arthrophytes, ankyloses, arthralgia, arthrocele, genu valgum.

This title does not include: Rheumatic arthritis (47).

148. Amputation.—This title only includes those cases in which the lesion, or cause of the amputation, is not indicated.

This title does not include: Amputation of the breast (133), amputation of the penis (126).

Complications: Septicemia, tetanus, hemorrhage.

149. Other diseases of the organs of locomotion.—This title includes: Hygroma, perichondritis, disarticulation, tarsalgia, flat-foot valgus, painful valgus, retraction of the digits or of the palmar aponeurosis, Dupuytren's contraction, rupture of muscles nontraumatic, muscular diastasis, myodiastasis, rupture of a tendon nontraumatic, diseases of the tendons, tenophytes, tenosynovitis, tenotomy, tenorrhaphy, torticolis, lumbago, curvature.

X.—MALFORMATIONS.

150. Congenital malformations (stillbirths not included).—This title includes: Malformation, monstrosity, anomaly, arrested development, congenital hydrocephalus, hydrocephalus (without qualification), megalocephalus, hydrorachis, spina bifida, encephalocele, podencephalous, congenital eventration, omphalocele, exomphalous, ectopia, imperforate anus, etc., hare lip, anaspadias, hypospadias, cryptochidism, vascular nevus, polydactylism, syndactylism, congenital clubfoot, talipes varus, valgus, or equinus, congenital deafness, or blindness, persistence of the foramen ovale.

This title does not include: Colomboma (75), flatfoot painful valgus (149), acquired hydrocephalus (74c).

XI.—DISEASES OF INFANCY.

150 bis. Births (children born in hospital and leaving the hospital without having been sick)—(For morbidity statistics only).

151. Congenital debility—icterus and sclerema.—This title includes: Premature births, atrophy (infantile), icterus or hepatitis of the newly born, atelectasis of the lungs of the newly born, edema of the newly born.

NOTE.—Under this title only compile children under three months old.

152. Other diseases peculiar to infancy.—This title includes umbilical hemorrhage, inflammation of the umbilicus, cyanosis of newly born.

NOTE.—Under this title only compile children under three months old.

153. Neglect.

XII.—DISEASES OF OLD AGE.

154. Senile debility.—This title includes: Senility, old age, senile cachexia, senile exhaustion, senile dementia.

This title does not include: Senile grangrene (142).

XIII.—EXTERNAL VIOLENCE.

NOTE.—Among suicides should be classed only cases which are definitely stated as such, or which result from suicidal attempts.

Among the suicides compile only individuals over the age of majority. Minors should be regarded as victims of assassination.

155. Suicide by poison.—This title includes: Voluntary poisoning, willful taking of sulphuric acid or any other corrosive substance.

This title does not include: Morphinism (59), cocainism (59).

156. Suicide by asphyxia.—This title includes: Suicide by burning charcoal.

157. Suicide by hanging or strangling.—This title includes: Hanging.

158. Suicide by drowning.

159. Suicide by firearms.

160. Suicide by cutting instruments.

161. Suicide by precipitation from height.

162. Suicide by crushing.

163. Suicide by other means.

164. Fractures.—This title includes: Detachment of the epiphysis, fracture of the cranium.

165a. Sprains.—This title includes: Distension of the ligaments. (For morbidity statistics only.)

166b. Dislocations.—This title includes: Luxation and subluxation.

166. Other traumatic accidents.—This title includes: Stabs by cutting instruments, contusion, bite (neither venomous nor virulent), crushing, railroad accidents (except suicide), injury by cutting instruments (without evidence of suicide), accidental fall, concussion of the brain, perforation of the skull, traumatic hemorrhage, traumatic fever, traumatic eventration, perforation of the abdomen or chest, all acute affections qualified "traumatic," wounds by firearms.

167. Burns by fire.—This title includes: Burns by boiling water, steam, petroleum.

This title does not include: Conflagration (174).

168. Burns by corrosive substances.—This title includes: Burns by vitriol.

169. Insolation.—This title includes: Sunstroke.

170. Freezing.—This title does not include: Cold (newly born) (153).

171. Electrical shock.—This title includes: Lightning.

172. Accidental drowning.—This title includes: Submersion (without suicidal intent).

173a. Overwork.—This title includes: Fatigue. (For morbidity statistics only.)

173b. Inanition.—This title includes: Hunger, insufficient food (except of the newly born), poverty.

This title does not include: Neglect (newly born) (153), insufficient food of the newly born (153), sitiophobia (68), hysterical anorexia (74a).

174. Inhalation of noxious gases (not suicidal).—This title includes: Accidental asphyxia (except pathological asphyxia and except suicide), asphyxia by illuminating gas, asphyxia by stove (stationary or movable), absorption of carbon dioxid, conflagration, inhalation of sulphydrate of ammonia, inhalation of chloroform, inhalation of protoxid of nitrogen.

This title does not include: Asphyxia of adults (without other indication) (179).

175. Other acute poisonings.—This title includes: All acute poisonings (except suicide), antimonial cholera, acute ergotism, absorption of venom, bites of snakes, accidental absorption of sulphuric acid or other corrosive substances.

This title does not include: Saturnism (57), hydrargyrism, etc. (58 or 59 according to the case), morphinism, chronic ergotism, etc. (59).

176. Other external violence.—This title includes: Accident (without other explanation), bad treatment (of an infant), capital punishment, foreign bodies in the larynx, foreign bodies in the trachea.

CAUSES ILL-DEFINED.

The following titles only include those diseases ill-defined by the physician, either on account of insufficiency of information or because the disease is badly diagnosed or because the physician has neglected to formulate a complete diagnosis.

177. Dropsy.—This title includes: Anasarca, ascites, edema of the extremities or general edema, organic lesion (not defined).

This title does not include: Edema of the newly born (151), edema of the glottis (88), pulmonary edema (95), edema of the brain (64).

178. Sudden death.—This title includes: Syncope (resulting in death).

This title does not include: Puerperal sudden death (140), nor "sudden death" following some explanation such as "sudden death diabetic" (50), or "sudden death apoplectic" (64).

179. Causes of death not specified or ill-defined.—This title includes: Exhaustion or cachexia or debility (adults), asthenia, adynamia, ataxoadynamia, coma, asthenic hectic, colliquative, or gastric or bilious or catarrhal, or pituitary fever, gastric disease, fever of dentition, paralysis of the heart (in German, *herzlahmung herzschlag*, etc.; in English, *heart failure*, etc.), cyanotic asphyxia (without cause indicated, newly borns excepted), or any other insufficient diagnosis.

This title does not include: Congenital debility (151), exhaustion, cachexia or debility of old age (154), ataxoadynamic fever (1) or continued fever (1) or hay fever (99), asphyxia from external causes (156 or 174), cyanosis of the newly born (152).

RESOLUTIONS ADOPTED BY THE INTERNATIONAL COMMISSION.

The following important resolutions relative to the use of the nomenclatures, which the commission has arranged, were adopted:

Medical and lay certificates of deaths.—The statistics must show how many of the deaths have been certified to by physicians, especially by the attending physicians, and how many have been certified to by persons not physicians.

Detailed nomenclature.—The headings beginning with the word "other" can always be subdivided by registrars if deemed necessary.

The headings beginning with the words "bis of which" shall not be retained and filled out unless there is some special reason.

Nomenclatures intermediate between the detailed and abridged nomenclatures.—Registrars who do not wish to adopt the detailed nomenclatures, and who find the abridged nomenclature insufficient, shall use all the headings of the abridged nomenclature, and shall choose their other headings from the detailed nomenclature. In this way their statistics will remain comparable with those of other countries.

Abridged nomenclature.—In compiling causes of deaths under heading 12 (other epidemic diseases), each cause of death should be given by its number as it appears in the detailed nomenclature.

Statistics of stillbirths.—It is desirable that every mortality table be completed by a supplementary one giving the number of stillbirths (i. e., the nomenclature of the causes of intra uterine death).

CREATION OF AN INTERNATIONAL BUREAU OF STATISTICAL DEMOGRAPHY.

[Extract from the proceedings.]

M. Huizinga (Holland) proposes that the statistics kept in conformity with the nomenclatures prepared by the international commission shall be centralized in an international bureau of statistical demography, which will have charge of comparing nosological statistics, as to their uniformity; of receiving the criticism which shall be made on the work of the commission, and thereby prepare a work for the decennial revision, which is to take place in 1900.

This proposition was unanimously adopted.

M. Huizinga (Holland) then moved that this bureau of international statistical demography be at Paris, and that M. Jacques Bertillon be charged with its direction.

This motion was unanimously adopted.

M. Jacques Bertillon (France) thanks the international commission for the new proof of confidence which is given him, and declares himself profoundly touched. He asks that the commission state with more precision the services expected of him, in order that he may the better fulfill his duties.

Mr. President explains that Dr. Bertillon shall have to receive the statistic documents made in conformity with the nomenclatures adopted by the commission; to determine whether involuntarily the compilers of these statistics have departed from the rules prescribed by the commission, and in such case to make it known to them.

He will give explanations to those seeking information. He will receive the remarks which competent authorities may formulate in the work of the commission.

The international commission approved the programme outlined by the president.

DEATHS ATTRIBUTED SIMULTANEOUSLY TO TWO CAUSES.

TABLES INDICATING HOW THEY SHOULD BE CLASSED.

It happens very often that a death is attributed by the physician to two causes at the same time. However, it is clear that the death is to be counted only once. To which of the two causes shall it be attributed?

Very often the answer to this question is given by the physician himself. If he writes, for example, "rheumatic pleurisy," or "pleurisy following rheumatism," there remains no doubt as to which is the cause of death. But cases where two diseases are indicated at the same time, without any ties connecting them, require our special attention.

Most frequently in such cases one of the two diseases is only a complication of the other. The customary proceeding is to report the death as due to the primary disease, i. e., to the one which has brought about the other. But as the registrar is not, as a rule, a physician, it is proper to guide him in determining the primary disease. This is one of the reasons for making the special table which follows.

There are other reasons. It may happen that two diseases given as causes of death have no connection whatever with each other. There is nothing, in fact, to prevent an individual suffering from cirrhosis of the liver from contracting typhoid fever, although these diseases have no connection with each other and do not depend upon each other. There is nothing to prevent him from breaking his leg and dying from the effects. There is nothing to prevent him from committing suicide—for the physical and moral sufferings, the misery which results from his disease, the vice itself which caused it, favor this dismal resolution. To which of these causes of death so different from each other should the death be attributed in the statistics? Whatever solution of this question is adopted it is preferable that this solution be uniform.

It has been decided, then, to anticipate and to formulate in advance all the possible and imaginable cases in such a way that the international statistics may be as comparable as possible.

RULES.

The following are the rules which will hold in making a choice between two simultaneous diagnoses:

First. If one of the two diseases is an immediate and frequent complication of the other, the death should be classed under the heading of the primary disease. Examples: Infantile diarrhea and convulsions compile as infantile diarrhea. Measles and bronchial pneumonia compile as measles. Scarlatina and diphtheria compile as scarlatina. Scarlatina and nephritis compile as scarlatina.

SECOND. If it is not absolutely certain that one of the diseases comes directly from the other (as in the preceding cases), the question should be settled as to whether any very great difference exists in the seriousness of the two diseases, and the death should be classed under the heading of the more dangerous disease. Example: Organic disease of the heart and coryza.

The one disease is not caused by the other, and although coryza can be occasionally the cause of death, it is nevertheless certain that the heart disease is the real cause.

THIRD. If one of the two causes of death is an infectious disease, it is preferable that the death be attributed to the infectious disease, for the statistics of the infectious diseases are of particular importance to the sanitarian, and it is important that these statistics be as complete as possible. Example: Biliary calculus and typhoid fever.

These two diseases bear no relation to each other; they are almost equally fatal; the death should be compiled under the title of typhoid fever as being an infectious disease.

The three preceding rules suggest and explain the rulings for a great number of cases. Whenever they are not applicable, the following rules will serve for guidance:

FOURTH. If one disease of rapid development is indicated at the same time as one of slow development, the death should, by preference, be compiled under the title of the first. Example: Insanity and acute articular rheumatism.

The two diseases bear no relation to each other; both are compatible with life, but insanity is of slow development, whereas acute articular rheumatism is more rapid in development, and the death should be compiled under the latter heading.

Likewise, if a death is attributed simultaneously to a disease, and to external violence, it is preferable to compile the death under the latter. Example: Locomotor ataxia and accidental drowning.

The individual could have lived a very long time with ataxia, while the drowning was undoubtedly the cause of death. The importance, from a social standpoint, which attaches to the total number of violent deaths, contributes to dictating this decision. This rule loses its rigor if the violence is not of itself of the nature to cause death; that is to say, if it has caused only a fracture, a sprain, or dislocation. These accidents are only exceptionally sufficient to cause death; in this case the second rule is evidently applicable.

FIFTH. Finally, if none of the preceding rules is applicable, the choice between the two diagnoses should be that which best describes the case. Example: Lead poisoning and pulmonary emphysima.

The death should be compiled under the title of lead poisoning.

We conclude by saying that more attention should be paid to precise diagnoses than to those which are vague and indefinite, such as hemorrhage or encephalitis.

We have tried to avoid, as far as possible, the requirement of arbitrary decisions by means of the preceding rules.

In practice the first of these rules, which is the most logical of all, is about the only one which finds frequent application. The others have been formulated with a view to providing for all cases and regulating all with method and precision.

RULES FOR THE USE OF THE FOLLOWING TABLES.

FIRST. Find the table belonging to the disease whose number in the nomenclature is the lower. Example: Typhoid fever (1) and pneumonia (93). The lower number is evidently the number (1). Look for the table belonging to typhoid fever, i. e., No. 1.

SECOND. Find there the number corresponding to the other disease and see if this number is printed in heavy or light type.

If this number is printed in light type, compile the death under the heading of the disease to which the table belongs. Example: In the example above, the number 93 is printed in light type. The death then should be compiled under typhoid fever, i. e., the disease to which the table belongs.

If, on the other hand, the number is printed in heavy type, the death should be compiled under the title corresponding to this number. Example: Suppose a bulletin reads at the same time epilepsy and pneumonia. Epilepsy bears the number 69 and pneumonia number **93**. Look for Table No. 69 belonging to epilepsy. In this table the number **93** is printed in heavy type, therefore the death should be compiled under No. **93**, pneumonia.

1.—**2**, 3, 4, 5, 6, 7, 8, 9, 10, 11, **12**, 13, 14, **15**, **16**, 17, 18, 20, **21**, **22**, **23**, 24, 25, **26**, **27**, **28**, **29**, **30**, **31**, **32**, **33**, **34**, 35, 36, 37, 38, **39**, **40**, **41**, **42**, **43**, **44**, **45**, 46, 47, 48, 49, **50**, **51**, **52**, **53**, 54, 55, 56, 57, 60, 61, **62**, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112,** 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 154, from 155 to 176.

2.—3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, **21,** 22, **23,** 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45,** 46, 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62,** 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112,** 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 154, from 155 to 176.

3.—4, 5, 6, 7, 8, 9, 10, 11, **12,** 13, 14, **15, 16,** 17, 18, 20, **21, 22, 23,** 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45,** 46, 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62,** 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, **79,** 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, **103,** 105, 106, 107, **108,** 110, 111, **112,** 113, 115, 116, **118,** 119, 120, 122, 124, **125,** 127, 128, **129, 131,** 133, 134, 135, **136, 137, 138, 139, 140,** 141, 142, 143, 144, **146,** 150, 151, 152, 153, 154, from **155 to 176.**

4.—5, 6, 7, 8, 9, 10, 11, **12,** 13, 14, 15, 16, 17, 18, 20, **21, 22, 23,** 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45,** 46, 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62, 64,** 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, **79,** 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, **103,** 105, 106, 107, **108,** 110, 111, **112,** 113, 115, 116, **118,** 119, 120, 122, 124, **125,** 127, 128, **129, 131,** 133, 134, 135, **136, 137, 138, 139, 140,** 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from **155 to 176.**

5.—6, 7, 8, 9, 10, 11, **12,** 13, 14, **15, 16,** 17, 18, 20, **21,** 22, **23,** 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45,** 46, 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62,** 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112,** 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

6.—**7,** 8, **9,** 10, 11, **12, 13, 14, 15, 16,** 17, 18, 20, **21, 22, 23,** 24, **25, 26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, **36,** 37, 38, **39, 40, 41, 42, 43, 44, 45, 46,** 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62, 64, 65,** 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, **77, 78, 79, 80, 81,** 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, **103, 105, 106,** 107, **108, 110,** 111, **112,** 113, 115, **116, 118,** 119, 120, 122, 124, **125,** 127, 128, 129, **131,** 133, 134, 135, 136, **137, 138, 139, 140,** 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

7.—8, 9, 10, 11, **12, 13, 14, 15, 16,** 17, 18, 20, **21, 22, 23,** 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45,** 46, 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62, 64,** 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112,** 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

8.—**9,** 10, 11, **12, 13, 14, 15, 16,** 17, 18, 20, **21, 22, 23,** 24, **25, 26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45, 46,** 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62, 64,** 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, **77, 78, 79, 80, 81,** 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, **103, 105, 106,** 107, **108, 110,** 111, **112,** 113, 115, **116,** 118, 119, 120, 122, 124, **125,** 127, 128, 129, **131,** 133, 134, 135, 136, **137, 138, 139, 140,** 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

9.—10, 11, **12, 13, 14, 15, 16,** 17, 18, 20, **21, 22, 23,** 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, **36,** 37, 38, **39, 40, 41, 42, 43, 44, 45,** 46, 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62, 64,** 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112,** 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

10.—11, **12, 13, 14, 15, 16,** 17, 18, 20, **21, 22, 23,** 24, **25, 26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45, 46,** 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62, 64, 65, 66, 67,** 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, **79, 80,** 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, **103, 105, 106,** 107, 108, 110, 111, **112,** 113, 115, **116,** 118, 119, 120, 122, 124, **125,** 127, 128, 129, **131,** 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

11.—**12, 13, 14, 15, 16,** 17, 18, 20, **21, 22, 23,** 24, **25, 26, 27, 28, 29, 30, 31, 32, 33, 34,** 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45, 46,** 47, 48, 49, **50, 51, 52, 53,** 54, 55, 56, 57, 60, 61, **62, 64, 65, 66, 67,** 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, **79, 80, 81,** 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, **103, 105,** 106, 107, **108, 110,** 111, **112,** 113, 115, **116, 118,** 119, **120,** 122, 124, **125,** 127, 128, 129, **131,** 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

12.—13, 14, **15, 16**, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48. 49. 50, 51, 52, 53, 54, 55, 56, 57, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

13.—14, **15, 16**, 17, 18, 20, **21, 22, 23**, 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34**, 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45**, 46, 47, 48, 49, **50, 51, 52, 53, 54**, 55, 56, 57, 60, 61, **62**, 64, 65, 66, **67**, 68, 69, 70, 71, 72, 73, 75, 76, 77. 78, **79**, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103. **105**, 106, 107, 108, 110, 111, **112**, 113, 115, 116, 118, 119, **120**, 122, 124, 125, 127. 128, 129, 131, 133, 134, 135, 136, **137**, 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

14.—15, 16, 17, 18, 20, **21, 22, 23**, 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34**, 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45**, 46, 47, 48, **49, 50, 51, 52, 53**, 54, 55, 56, 57, 60, **61, 62, 64, 65**, 66, 67, 68, 69, 70, 71, 72, 73, 75. 76, 77, 78, **79, 80**, 81, 82, 83, 84. 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, **103**, 105, 106, 107, 108, 110, 111, **112**, 113, 115, 116, 118, 119, **120**, 122, 124, **125**, 127, 128, **129, 131**, 133, 134, 135, 136, **137, 138, 139**, 140, 141, 142. 143. 144, 146, 150, 151, 152, 153, 154, from **155** to **163**, 164, 165, from **166** to **176**.

15.—This disease is sufficiently important (and sufficiently unusual in all countries) to demand that every bulletin upon which it stands, even if in conjunction with another disease, should be compiled under its heading.

16.—17, 18, 20, **21**, 22, **23**, 24, 25, **26**, 27, **28, 29, 30, 31, 32, 33, 34**, 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45**, 46, 47, 48, 49, **50, 51, 52, 53**, 54, 55, 56, 57, 60, 61, 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

17.—18, 20, **21, 22, 23, 24**, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34**, 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45**, 46, 47, 48, 49, **50, 51, 52, 53**, 54, 55, 56, 59, 60, 61, **62, 64**, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77. 78, **79**, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112**, 113, 115, 116, 118, 119, **120**, 122, 124, 125, 127, 128, 129, **131**, 133, 134, 135, 136, **137, 138, 139, 140**, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from 155 to 176.

18.—20, 21, 22, 23, 24, **25, 26, 27, 28, 29, 30, 31, 32, 33, 34**, 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45, 46, 47**, 48, **49, 50, 51, 52, 53**, 54, **55**, 56, **57**, 60, 61, **62, 64, 65, 66**, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, **79, 80**, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, **96**, 97, 98, 99, **103, 105, 106**, 107, **108, 110, 111, 112, 113, 115, 116, 118**, 119, **120, 122, 124, 125**, 127, 128, **129, 131, 133**, 134, **135, 136, 137, 138, 139, 140, 141**, 142, **143, 144**, 146, **150, 151**, 152, 153, 154, from 155 to 176.

19.—To be determined according to the nature of the disease.

20.—21, 22, 23, 24, 25, **26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36**, 37, 38, **39, 40, 41, 42, 43, 44, 45, 46**, 47. 48, **49, 50, 51, 52, 53**, 54. **55**, 56, 57, 60, 61, **62, 64**, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, **111, 112**, 113, **115**, 116, **118**, 119, **120, 122, 124, 125**, 127, 128, **129, 131, 133**, 134, **135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146**, 150. 151, 152, 153, 154, from **155** to **176**.

21, 22, 23, 24, 25.—The propagation of these diseases can be controlled by prophylactic measures: it is important to know every case; these diagnoses ought, then, on principle, to be preferred to all others, except some epidemic diseases already indicated above.

26-34.—Tuberculosis diagnosed in several organs[a] should be compiled under 34, 35, 36, 37, 38, **39, 40, 41, 42, 43, 44, 45**, 46, 47, 48, 49, **50, 51, 52, 53**, 54, 55, 56, 57, 60, 61, **62**, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, 96. 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112**, 113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137, 138, 139**, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from **155** to **163**, 164, 165, from **166** to **176**.

35.—36, 37, 38, **39, 40, 41, 42, 43, 44, 45**, 46, **47**, 48, 49, **50, 51, 52, 53**, 54, 55, 56, **57**, 60, **61, 62, 64, 65, 66, 67, 68**, 69, 70, 71, 72, 73, 75, 76, **77, 78, 79, 80, 81, 82, 83**, 84, 85, 90, 91, 92, 93, 94, 95, **96**, 97, 98, 99, **103, 105, 106**, 107, **108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125**,

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[a] Cold abscesses, or white swelling, or abscesses by congestion are simply results of tuberculosis and do not constitute a new symptom Thus, for example, a death caused by "Pott's disease and abscess by congestion" ought to be classed under 30 and not under 34.

127, 128, **129, 131**, 133, 134, **135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154**, from **155** to **176**.

36.—37, 38, **39, 40, 41, 42, 43, 44, 45, 46, 47**, 48, **49, 50, 51, 52, 53**, 54, **55**, 56, **57, 60, 61, 62, 64, 65, 66, 67, 68, 69**, 70, 71, **72, 73**, 75, 76, **77, 78, 79, 80, 81, 82, 83, 84**, 85, **90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125**, 127, **128, 129, 131, 133, 134, 135, 136, 137, 138, 139, 140, 141**, 142, **143, 144**, 146, 150, 151, 152, 153, 154, from **155** to **176**.

NOTE.—This does not include acquired syphilis (adults). Hereditary syphilis of infancy is a disease much more often fatal.

37, 38.—Diseases enumerated in the development are the only ones that should be compiled under these headings. In all other cases, where two diagnoses are indicated simultaneously the bulletin should not be compiled under these headings.

39–46.—By reason of the extreme seriousness of these diseases, all bulletins, without exception, which make mention of them should be compiled under their headings, 39–46 (except deaths by violence); however, inanition can only be a consequence of cancer of the stomach.

47.—48, **49, 50, 51, 52, 53**, 54, **55**, 56, **57**, 60, 61, **62, 64, 65, 66, 67, 68**, 69, 70, 71, 72, 73, 75, 76, 77, 78, **79, 80, 81, 82, 83, 84**, 85, 90, 91, 92, 93, 94, 95, **96**, 97, 99, **103, 105, 106**, 107, **108, 110, 111, 112, 113, 115**, 116, **118, 119, 120, 122, 124, 125**, 127, **128, 129, 131, 133**, 134, **135, 136, 137, 138, 139, 140, 141**, 142, 143, 144, 146, 154, from **155** to **176**.

48.—The diseases enumerated in the development are the only ones which should be compiled under this heading. In all other cases where chronic rheumatism or gout are given simultaneously with another disease, the bulletin should not be compiled under this heading.

49.—This rare disease should be recorded every time it appears.

50, 51, 52, 53.—By reason of the extreme seriousness of these diseases, all bulletins which make mention of them should be compiled under their headings (except violent deaths, from **155** to **163** and from **166** to **176**).

54.—Pernicious anæmia should always be classified under this heading, even if it is complicated with another disease.

On the contrary, anæmia (without qualification) and chlorosis, whenever they are mentioned in conjunction with another disease, are more often only a consequence. The bulletin should then be compiled under the heading of the other disease.

56.—This intoxication characterizes the disease less completely than the diseases more exactly specified, even when these diseases come from alcoholism. For example, the words "cirrhosis of the liver" characterize a disease better than the vague mention of "alcoholism" does. Therefore any other diagnosis should be preferred to this one.

57.—58, 59, 60, 61, **62**, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, **77, 78, 79, 80, 81, 82**, 83, 84, 85, 90, 91, 92, 93, 94, 95, **96**, 97, 98, 99, **103, 105**, 106, 107, **108**, 110, **111, 112**, 113, 115, **116, 118, 119, 120**, 122, 123, 124, 125, 127, 128, 129, 131, 133, **134, 135, 136, 137, 138, 139, 140, 141**, 142, 143, 144, 146, 154, from **155** to **176**.

58, 59.—It is impossible to give detailed rules for headings so general and which include such varieties of intoxication. The development of the headings must be consulted and the same rules applied as in the case of lead poisoning.

60.—This heading should be avoided. **61, 62, 64, 65, 66, 67, 68, 69**, 70, 71, **72**, 73, 75, 76, **77, 78, 79, 80, 81, 82, 83, 84**, 85, **90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125**, 127, 128, 129, 131, 133, 134, 135, 136, **137, 138, 139, 140, 141**, 142, 143, 144, 146, 154, from **155** to **176**.

61.—By reason of the extreme seriousness of this disease all bulletins which make mention of it should be classed under heading 61 (except when meningitis is in the development of another disease cited as being a frequent complication of this disease).

62.—The above applies to this heading also (except suicides and other violent deaths).

63.—It is impossible to give detailed rules for a heading so general.

64.—65, 66, **67**, 68, 69, 70, 71, 72, 73, 75, 76, **77, 78, 79, 80**, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, **96**, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112**, 113, 115, 116, 118, 119, **120**, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137, 138, 139**, 140, 141, 142, 143, 144, 146, 154, from **155** to **163**, 164, 165, from **166** to **176**.

65.—66, **67**, 68, 69, 70, 71, 72, 73, 75, 76, **77, 78, 79, 80**, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112**, 113, 115, 116, 118, 119, **120**, 122, 124, 125, 127, 128, 129, 131, 133, 142, 143, 144, 146, 154, from **155** to **163**, 164, 165, from **166** to **176**.

66.—**67, 68, 69,** 70, 71, 72, 73, 75, 76, **77, 78, 79, 80, 81, 82, 83, 84,** 85, 90, 91, 92, 93, 94, 95, **96,** 97, 98, 99, **103, 105, 106,** 107, **108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125,** 127, 128, **129, 131,** 133, **134, 135, 136, 137, 138, 139, 140, 141,** 142, 143, **144, 146, 150, 151, 152,** 153, **154,** from **155** to **163,** 164, 165, from **166** to **176.**

67.—68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 90, 91, 92, 93, 94, 95, **96,** 97, 98, 99, 103, **105,** 106, 107, 108, 110, 111, **112,** 113, 115, 116, 118, **119, 120,** 122, 124, **125,** 127, 128, **129, 131,** 133, **134, 135, 136, 137, 138, 139, 140, 141,** 142, 143, **144,** 146, 154, from **155** to **176.**

68.—69, 70, 71, 72, 73, 75, 76, **77, 78, 79, 80, 81, 82, 83, 84,** 85, **90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 106,** 107, **108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122,** 124, **125,** 127, 128, **129, 131,** 133, **134, 135, 136, 137, 138, 139, 140, 141,** 142, **143, 144, 146,** 154, from **155** to **176.**

69.—70, 71, 72, 73, 75, 76, **77, 78, 79, 80, 81, 82, 83, 84,** 85, **90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 103, 105, 106,** 107, **108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122,** 124, **125,** 127, 128, **129, 131,** 133. **134, 135, 136, 137, 138, 139, 140, 141,** 142, **143, 144, 146,** 154, from **155** to **176.**

70, 71.—These indefinite headings should be avoided. As a rule, these words signify simply a symptom of another disease.

72.—The bulletins which mention at the same time "Tetanus" and a disease caused by external violence (fracture, traumatism, etc.) or a puerperal disease, should be compiled as "tetanus." Likewise infants suffering from "tetanus" or "trismus" at the same time with a disease of infancy.

73.—The same rules apply as for epilepsy (69).

74.—It is impossible to give detailed rules for headings so general.

75, 76.—These diseases rarely cause death. Whenever they occur in conjunction with another disease the death should generally be attributed to the latter.

77.—**78, 79,** 80, 81, 82, 83, 84, 85, 90, 91. 92, 93, 94, 95, **96,** 97, 98, 99, 103, 105, 106, 107, 108, 110, 111, **112,** 113, 115, 116. 118, **119, 120,** 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137, 138, 139, 140,** 141, 142, 143. 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

78.—**79, 80, 81, 82,** 83, 84, 85, 90, 91, 92, 93, 94, 95, **96,** 97, 98. 99, **103, 105,** 106, 107, 108, 110, 111, **112,** 113, 115, 116, 118, **119, 120,** 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137, 138, 139, 140,** 141. 142. 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

79.—80, 81, 82, 83, 84, 85, 90, 91. 92, 93, 94, 95. 96, 97. 98, 99, 103. **105,** 106, 107, 108, 110, **111, 112,** 113, 115, **116, 118,** 119, 120, 122, 124, **125,** 127, 128, 129, 131, 132. 133, 134. **135, 136, 137, 138, 139**, 140, 141, 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

80.—**81,** 82, 83, 84, 85, 90, 91, 92, 93, 94, 95. **96,** 97, 98, 99, 103, 105, 106, 107, 108, **110,** 111, **112,** 113, 115, **116, 118, 119,** 120, 122, 124, 125. 127, 128. 129. 131, 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

81.—The same rules as for angina pectoris (80).

82.—**83,** 84, 85, 90, 91, 92, 93, 94, 95, **96,** 97, 98, 99, **103,** 105, 106, 107, 108, **110,** 111, **112,** 113, 115, **116, 118,** 119, **120,** 122, 124, 125, 127, 128, 129, 131, 133, **134, 135, 136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, 150, 151, 152, 153, 154.

83.—84, 85, 90, 91. 92, 93, 94, 95, **96,** 97, 98, 99, 103, 105, 106. 107, 108, **110,** 111, **112,** 113, 115, **116, 118, 119, 120, 122, 124, 125,** 127. 128, **129,** 131, 133, 134, **135, 136, 137, 138, 139,** 140, **141,** 142, **143, 144,** 146. 154. from **155** to **176.**

84.—85, 90, 91, 92, 93, 94. 95, **96,** 97. 98. 99. 103. **105**, 106, 107, **108, 110, 111, 112,** 113, 115, **116, 118, 119, 120, 122, 124, 125,** 127, 128, **129, 131, 133,** 134, **135, 136, 137, 138, 139,** 140, **141,** 142, **143, 144,** 146, 154, from **155** to **176.**

85.—This diagnosis should be avoided.

86, 87, 88, 89.—It is impossible to give detailed rules for headings so general.

90–99.—When these diseases are mentioned in conjunction with another, they are as a rule complications of the latter, and in consequence the disease should be compiled under this latter. Violent deaths are the only exceptions.

100–102.—It is impossible to give detailed rules for headings so general.

103.—105, 106, 107, **108,** 110, 111. **112,** 113, 115, 116, **118, 119, 120,** 122, 124, **125,** 127, 128, **129,** 131, 133, 135, 134, 136, **137, 138, 139,** 140, 141. 142. 143, 144, 146, 154, **155,** from **156** to **163,** 164, 165, from **166** to **176.**

104.—It is impossible to give detailed rules for headings so general.

105.—**106,** 107, **108, 110,** 111, **112,** 113, 115, 116, 118, **119, 120,** 122, 124, 131, 133, 142, 143, 144, 146, **150,** 151, 152, 153, from **164** to **176.**

106.—107, **108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125,** 127, **128, 129, 131, 133,** 134, **135, 136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, 154, from **155** to **176.**

107.—**108, 110, 111, 112, 113, 115, 116, 118, 119, 120, 122, 124, 125,** 127, **128, 129, 131, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 150, 151, 152, 153,** 154, from **155** to **176.**

108.—**110,** 111, **112,** 113, 115, 116, **118, 119, 120,** 122, 124, 125, 127, 128, 129, 131, 133, 134, **135, 136, 137, 138, 139,** 140, 141, 142, 143, 144, 146, 150, 151, 152, 153, 154, from **155** to **176.**

109.—It is impossible to give detailed rules for headings so general.

110.—**111, 112, 113,** 115, **116, 118, 119, 120,** 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, **137, 138, 139, 140,** 141, 142, 143, 144, 146, **150, 151, 152,** 153, 154, from **155** to **176.**

111.—**112,** 113, 115, 116, 118, **119, 120,** 122, 124, 125, 127, 128, **129, 131,** 133, 134, **135, 136, 137, 138, 139, 140,** 141, 142, 143, 144, 146, 154, from **155** to **176.**

112.—113, 115, 116, 118, 119, 120, 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

113.—**115,** 116, **118, 119, 120,** 122, **124, 125,** 127, 128, **129, 131,** 133, 134, **135, 136, 137, 138, 139, 140,** 141, 142, 143, 144, 146, **150, 151, 152,** 153, 154, from **155** to **176.**

114.—It is impossible to give detailed rules for headings so general.

115.—116, 118, 119, **120,** 122, **124, 125,** 127, 128, **129, 131,** 133, 134, 135, 136, **137,** 138, 139, 140, 141, 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

116.—**118,** 119, **120,** 122, 124, 125, 127, 128, **129, 131,** 133, **134, 135, 136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, 150, 151, 152, 153, 154, from **155** to **163,** 164, 165, from **166** to **176.**

117.—It is impossible to give detailed rules for headings so general.

118.—119, **120,** 122, 124, 125, 127, 128, 129, 131, 133, 134, **135, 136, 137, 138, 139, 140,** 141, 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

119.—**120,** 122, 124, 125, 127, 128, 129, 131, 133, 134, 135, **136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

120.—122, 124, 125, 127, 128, 129, 131, 133, 134, 135, **136, 137, 138, 139, 140,** 141, 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

121.—It is impossible to give detailed rules for headings so general.

122.—124, **125,** 127, 128, **129, 131,** 133, 134, **135, 136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, 154, from **155** to **176.**

123.—It is impossible to give detailed rules for headings so general.

124.—**125,** 127, 128, **129,** 131, 133, 134, **135, 136, 137, 138, 139, 140, 141,** 143, 144, 146, 154, from **155** to **176.**

125.—**142,** 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

126.—It is impossible to give detailed rules for headings so general.

127.—**128, 129, 131, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146, 154,** from **155** to **176.**

128.—**129, 131,** 133, **134, 135, 136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, **154,** from **155** to **176.**

129.—131, 133, 134, **135, 136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

130.—It is impossible to give detailed rules for headings so general.

131.—133, 142, 143, 144, 146, 154, from **155** to **163,** 164, 165, from **166** to **176.**

132.—It is impossible to give detailed rules for headings so general.

133.—**134, 135, 136, 137, 138, 139, 140, 141,** 142, 143, 144, 146, **150, 151, 152,** 153, 154, from **155** to **176.**

134.—**142, 143, 144,** 146, from **155** to **163,** 164, from **165** to **176.**

135.—**136, 137, 138, 139,** 140, 141, 142, 143, 144, 146, from **155** to **163,** 164, 165, from **166** to **176.**

136.—**137,** 138, 139, 140, 141, 142, 143, 144, 146, from **155** to **163,** 164, 165, from **166** to **176.**

138.—139, 140, 141, 142, 143, 144, 146, from **155** to **163,** 164, 165, from **166** to **176.**

139.—140, 141, 142, 143, 144, 146, from **155** to **163,** 164, 165, from **166** to **176.**

140.—141, 142, 143, 144, 146, from **155** to **163,** 164, 165, from **166** to **176.**

141.—142, 143, 144, 146, from **155** to **163,** 164, 165, from **166** to **176.**

142.—**143, 144,** 146, **150, 151, 152, 153,** 154, from **155** to **163,** 164, 165, from **166** to **176.**

143.—**144, 146, 154,** from **155** to **163,** 164, 165, from **166** to **176.**
144.—**146, 150, 151, 152, 153, 154,** from **155** to **176.**
145.—It is impossible to give detailed rules for headings so general.
146.—154, from **155** to **163,** 164, 165, from **166** to **176.**
147, 148, 149.—It is impossible to give detailed rules for headings so general.
150.—151, 152, 153, 164, 165, from **166** to **176.**
151.—**152,** 153, **164, 165,** from **166** to **176.**
152.—153, 164, 165, from **166** to **176.**
153.—164, 165, from **166** to **176.**
154.—From **155** to **163,** 164, 165, from **166** to **176.**
155-163.—164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176.
164-165.—**166, 167,** 168, 169, **170,** 171, **172, 173, 174, 175,** 176.
166.—**167,** 168, 169, 170, 171, **172,** 173, **174,** 175, 176.
167.—168, 169, 170, 171, **172,** 173, **174,** 175, 176.
168.—169, 170, 171, **172,** 173, 174, **175, 176.**
169.—170, 171, **172, 173,** 174, 175, 176.
170.—171, **172, 173, 174,** 175, 176.

FINAL AGREEMENT ADOPTED BY THE INTERNATIONAL COMMISSION.

[Extract from the proceedings.]

Professor Brouardel, of the institute, in the chair.

On August 21, 1900, the international commission charged to revise the nomenclature of the causes of death met in full session at 3 o'clock p. m. in the regular session chamber.

Present:

Austria.—Dr. Stephane Sedlaczek, municipal counselor, director of the statistical department of the city of Vienna (delegate from the city of Vienna).

Belgium.—Dr. Van Ermengen, professor at the University of Ghent, member of the superior council of public hygiene; Dr. Putzeys, professor at the University of Liege, member of the superior council of public hygiene.

Bolivia.—Dr. Napoleon Rana, professor at the University of St. Xavier, Sucre.

Denmark.—Dr. Hoff, chief of the sanitary service of the city of Copenhagen, chevalier of the order of Danebrog.

Spain.—Gen. Charles Barraquer, director of the Geographical and Statistical Institute of Spain.

United States.—Dr. M. J. Rosenau, passed assistant surgeon and director of the hygienic laboratory, United States Marine-Hospital Service.

France.—Dr. Jacques Bertillon, chief of the municipal statistical works for the city of Paris, member of the consulting committee of public hygiene of France, member of the superior council of statistics; Dr. P. Brouardel, member of the institute, dean of the Faculty of Medicine of Paris, president of the consulting-committee of public hygiene of France; Dr. Netter, associate professor of the Faculty of Medicine of Paris, member of the consulting committee of public hygiene of France.

Honduras.—M. Désiré Pector, consul-general of Honduras.

Hungary.—Dr. Corneille Chyzer, state counselor, chief of the sanitary section to the minister of the interior of Hungary; Dr. Aladar Kovacs, under secretary to the central statistical bureau of the Kingdom of Hungary.

Italy.—Dr. Rudolphe Livi, chief of the statistical bureau of the war office of the Kingdom of Italy; Dr. Louis Simonetta, associate professor of the University of Sienne.

Mexico.—Dr. Porfirio Para, professor of the faculty of medicine of Mexico; Dr. José Ramirez, sanitary inspector, secretary to the superior sanitary council of Mexico.

Monaco.—Dr. Colignon.

Norway.—Dr. Klaus Hanssen, physician in chief of the hospital of Bergen.

Netherlands.—Mr. Menno Huizinga, inspector of hygienic services of Holland; Mr. Saltet, professor of hygiene of the University of Amsterdam.

Portugal.—Dr. Ferreira de Mattos, jr., professor at the University of Coïmbre; Dr. Jean de Mello Vianna, member of the Royal Academy of Sciences at Lisbon; Dr. Charles Léopold dos Santos.

Sweden.—Dr. Wawrinsky, counselor to the royal medical administration of Sweden.

Switzerland.—Dr. Guillaume, director of the Federal bureau of statistics at Berne.

Uruguay.—Dr. Henri Pouey, professor of the faculty of medicine of Montevideo.

The president presents the international commission the authentic text of the nomenclature of the causes of death arranged by the said commission. This nomenclature is attached to the present agreement, which the president invites the delegates to sign.

AGREEMENT.

The delegates agree to recommend to their respective governments the adoption of the nomenclatures of the causes of death attached to the present agreement, in order to insure uniformity and comparability in the statistics of the causes of death, beginning with the 1st of January, 1901.

They recognize that it is advisable that this nomenclature be revised every ten years, the first revision to take place in the course of the year 1910. In the absence of other arrangements, the Government of France is charged to convene, for this purpose and at this date, a meeting of a new international commission.

Countries that have not taken part in the commission or that have not signed the present agreement may assent to it if they desire.

In witness whereof the respective delegates have signed it.

Done at Paris the 21st August, 1900.

The delegates from Austria, Belgium, Bolivia, Denmark, Spain, United States, France, Honduras, Italy, Mexico, Monaco, Norway, Holland, Portugal, Sweden, Switzerland, and Uruguay declare themselves ready to sign this agreement.

The president quotes from the remarks made by the delegate from the city of Dresden (Germany) at the opening session of August 18.

There are several nomenclatures in use in the statistical bureaus of the German cities. At Dresden, for example, the monthly statistics are published according to the system drawn up by Messrs. Flinzer and Lackner at the request of the union of statisticians of the German cities; the weekly statistics, according to that of Virchow; in addition, the city is obliged to make a third table, also monthly to satisfy the imperial sanitary office, and a fourth—annual—for the Medical Commission of the Kingdom of Saxony (Landes-Medicinal-Collegium).

The simultaneous use, however, of several systems causes no difficulty whatever. It suffices to submit to a new arrangement the bulletins concerning diseases whose classification varies for the different systems. It follows that statistical bureaus can, just as easily as these four different reports are made, furnish reports in accordance with the Bertillon system, the commendable qualities of which the speaker recognizes, and this he thinks they can do without abandoning their present systems of classification, which are indispensable for comparison with the past.

The international commission accepted these remarks as part of the proceedings.

The president recalls that at the session of the morning of August 18 the delegate from Austria made the following remarks:

"The delegate from Austria states that a new nomenclature of diseases has just been drawn up in Austria, inspired by the nomenclatures proposed by M. Bertillon. This nomenclature, however, has been drawn up especially in reference to the statistics of hospitals, and is a little more lengthy than that of M. Bertillon. This nomenclature is still only in course of adoption; it will be revised in October or November next. An effort will be made to make it approach as nearly as possible to the nomenclature which the international commission shall adopt, but it may perhaps be necessary to retain some differences, in order not to depart too far from ancient traditions."

The international commission accepted these remarks as part of the proceedings.

The delegates from Vienna state that, while signing, they make the following declaration:

"The undersigned delegates agree to recommend the adopted nomenclatures to the administration of the city of Vienna, and to do all in their power to have them adopted by the 1st of January, 1901, in order to insure the comparability of the mortality statistics from the beginning of the twentieth century.

"Dr. HAAS.
"*Municipal Counselor of the City of Vienna.*
"Dr. SEDLACZEK ETIENNE,
"*Municipal Counselor.*
"*Director of the Statistical Department of the City of Vienna.*"

The international commission accepted these remarks as part of the proceedings.

The delegate from Denmark states that in signing the agreement he makes the following declaration:

"I voted yesterday for a publication of the protocol of the commission, in conformity with your proposition.

"Not being authorized by my Government, I must make this reservation—that my signature should be regarded simply as a personal assent.

"As M. Bertillon remarks in his report, the Royal Sanitary Council of Denmark has not 'for the moment' dared to accept the propositions of M. Bertillon. The reason for this decision was that such a reform would on certain points disturb our customary forms.

"I can only present, then, the protocol to my Government and for my part recommend to the board of health in our country partial and successive reforms as propositions made and adopted by the international commission.

"E. M. Hoff."

The international commission accepted these remarks as part of the proceedings.

The delegate from Russia makes the following remarks:

"Gentlemen: We, the Russian physicians, always endeavor to compile as far as possible the etiology, in order that a practical and immediate application to sanitary measures can be drawn from the information furnished by the statistics. The etiological division of the causes of death presents, it is true, the inconvenience of change with the progress of science, but, on the other hand, the anatomical division can no longer be considered as fixed; thus, for example, it is proposed to class tetanus among the nervous diseases, while in Russia, as moreover the commission has also accepted it, it is ranged among general diseases. On the other hand, the relative stability of the system adopted by the commission can not rival in advantages the etiological division as elaborated by the Russian commissions."

The international commission accepted these remarks as part of the proceedings.

The delegate from Switzerland states that in signing the agreement he makes the following declaration:

"The delegate of the Federal Council of Switzerland, having no other instructions from his Government than those of taking part in the conference and of making a report, wishes, nevertheless, to declare that although the classification of causes in the nomenclature resulting from the deliberations is not that which is recognized in Switzerland, he agrees to recommend in his country everything which will tend to establish comparable mortality statistics. This will be the more easy for him in that the new Swiss nomenclature arranged from the etiological point of view will permit of response to the demands of the three Bertillon nomenclatures."

The international commission accepted these remarks as part of the proceedings.

In witness whereof the undersigned delegates to the international commission charged to revise the nomenclature of causes of death of Paris have signed the proceedings, to which is attached an authentic copy of the agreement and the nomenclature of the causes of death.

Austria (city of Vienna): Sedlaczek.
Belgium: Putzeys, Van Ermengen.
Bolivia: Napoleon Rana.
Denmark: E. M. Hoff.
Spain: Carlos Barraquer.
United States: M. J. Rosenau.
France: P. Brouardel, Jacques Bertillon, Netter.
Honduras: Désiré Pector.
Hungary: Chyzer, Kovacs.
Italy: R. Livi, L. Simonetta.
Mexico: Porfirio, Parra, José Ramirez.
Monaco: Colignon.
Norway: K. Hanssen.
Holland: J. Menno Huizinga, R. Saltet.
Portugal: Daniel de Mattos, Carlos dos Santos, J. de Mello-Vianna.
Sweden: Rich. Wawrinsky.
Switzerland: Guillaume.
Uruguay: Enrique Pouey.

See Appendix, the assent of the Republic of Ecuador and the Republic of Salvador to the present agreement.

Certified in conformity with the original.

P. Brouardel,
The President of the Commission.
Jacques Bertillon,
Secretary-General.
Dr. Netter, *Secretary.*

APPENDIX I.

I, the undersigned, Rafael Rodriguez Zambrano, professor of the Central University of Ecuador, delegated by the President of Ecuador to the commission charged to revise the nomenclatures of the causes of death, profiting by the last clause of the agreement signed at the close of the work of that commission, declare, in virtue of the powers vested in me by my Government, that I agree to the terms of the said agreement.

RAFAEL RODRIGUEZ Z.

PARIS, *August 29, 1900.*

APPENDIX II.

LEGATION OF SALVADOR,
PARIS, *September 8, 1900.*

SIR: I have the honor to acknowledge the receipt of your letter dated August 31, in which you were kind enough to inform me that the note informing you of my appointment to represent my Government at the international commission charged with the revision of the nomenclature of the causes of death had arrived too late, the commission having concluded its work before its reception.

I regret very much this circumstance, which has deprived me from taking part in the sessions of the commission, but since its last clause gives me the right to add Salvador to the States which have already assented to the agreement, I wish to avail myself of it. Consequently, and in accordance with the text of the agreement, which you had the kindness to send to me, I agree to recommend to my Government the nomenclature adopted, and I think that it will take due note of this recommendation and of the advantage which will result for statistics from the uniformity in nomenclature.

Thanking you in advance, etc.,

RAFAEL ZALDIVAR.

The SECRETARY-GENERAL.

REPORT ON THE PROCEEDINGS OF THE TENTH INTERNATIONAL CONGRESS OF HYGIENE, HELD AT VIENNA, AUSTRIA, OCTOBER 13, 1900.

By P. A. Surg. M. J. ROSENAU.

VIENNA, AUSTRIA, *October 13, 1900.*

SIR: I have the honor to submit herewith a report upon the proceedings of the Tenth International Congress of Hygiene and Demography.

Respectfully, yours,

M. J. ROSENAU,
Passed Assistant Surgeon, M. H. S.

SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

PLAGUE.

Calmutte read a paper on plague, in which he treated the subject mainly from a therapeutical and prophylactic standpoint. He pointed out clearly the value of the antipeste serum of Yersin, both in the treatment and prevention of the disease. He also showed the value of the Haffkine prophylactic as a purely preventive measure. This paper has been made the subject of a special report. In the discussion which followed it was again emphasized that large doses of the serum are necessary in order to effect a cure. Liguere stated that 60 c. c. of the serum should be given into a vein as soon after the appearance of the disease as possible, and from 20 to 40 c. c. more should be injected twelve to twenty-four hours afterwards.

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The discussion upon the best means of destroying rats on board vessels brought out nothing new.

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The fact that the fleas of mice and rats may carry the disease was mentioned by Liguere.

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The danger of conveying infections in merchandise was discussed pro and con. The difficulties of disinfecting the cargo of a vessel carrying 10,000 tons was mentioned and its necessity questioned.

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The section was unanimously of the opinion that all vessels from an infected port should carry a supply of antipeste serum.

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Wurtz and Boergs stated that they found the bacillus of plague alive after forty days in sea water.

* * * * * * *

A resolution was passed in favor of France taking the initiative toward calling another international sanitary congress, in order to adopt international measures against the plague.

This resolution was unanimously passed, for everybody present at the meeting seemed to feel the danger menacing the world from the reawakening of this dreadful scourge.

YELLOW FEVER.

An interesting report upon the cause of yellow fever, by Proust and Wurtz, has already been translated and sent to the Bureau. (See Public Health Reports, Vol. XV, No. 36, September 7, 1900.) The authors of this report summed up the literature on the bacillus icteroides and its relation to yellow fever. They concluded that the bacillus icteroides discovered by Sanarelli seems to be the specific agent of yellow fever.

In a general discussion which followed no dissenting opinions were expressed.

DIPHTHERIA.

Roux presented a paper upon "Measuring the activity of serums," in which he reviewed the two methods: (1) His own method, based upon the amount of serum used to the weight of the guinea pig, and (2) the method of Behring and Ehrlich, based upon the system of "units." The latter system is now universally used, especially since the more exact studies of Ehrlich upon toxins, toxones, and toxoides. These studies have brought to the posology of antitoxins a precision which is welcomed by the physician.

The discussion following the reading of this paper brought out an almost unanimous expression of opinion as to the value of diphtheria antitoxin, both as a curative and preventive measure.

A resolution was unanimously passed by the section to the effect that the use of antitoxin as a preventive has no bad effects and may accomplish much good.

Another resolution was passed, though not unanimously, to the effect that a child should not be allowed to return to school after a case of diphtheria until the virulent bacilli disappear from the throat.

There was some objection to this resolution by Fraenkel, on the ground that the Loeffler bacillus sometimes remains in the throat six months, and that the time is not yet ripe to enforce a measure of such severity.

The only dissenting note as to the value of diphtheria antitoxin came from England, where it is claimed the results have not been as favorable as reported elsewhere.

It was shown that the mortality from diphtheria has diminished in all countries where the antitoxin is used. This was considered by some as a result of the treatment, especially as the disease has not abated in England, where the antitoxin treatment is not popular. It was argued on the other hand that the disease has grown milder in character in the past years, through natural or unknown causes. The fact remains that it is now very difficult to obtain virulent diphtheria cultures, and at the Pasteur Institute and other places where antitoxin is made it has been found necessary to use artificial means to increase the virulence of the diphtheria cultures in order to obtain a toxin of sufficient potency to produce antitoxin.

Babés reported especially interesting results from Roumania, where it seems diphtheria has been epidemic in severe form. In the villages where antitoxin was used the death rate was small and the disease soon disappeared, while in neighboring villages where the doctors were opposed to the use of antitoxin, the death rate was high and the disease assumed epidemic proportions.

Martin read a paper upon the treatment and prophylaxis of diphtheria and pointed out the brilliant results claimed for antitoxin in France.

During the years 1890 to 1894 there was an average of 1,432 deaths caused by diphtheria each year. The serum treatment began in 1894. For the five following years, 1895 to 1899, the annual average death rate from this disease has been 354. The difference between 1,432 and 354, or 1,078, represents the number of children which he claims are annually saved in Paris owing to the treatment.

Professor Rauchfüss, of St. Petersburg, made a special study of the importance of giving the injection early. He studied, with this point in view, the statistics of 39,000 cases, and found the mortality to be 7.4 per cent when the serum was injected on the first or second day; 16.2 per cent on the third day; 28 per cent when given still later.

Other figures were given to emphasize the importance of giving the serum early—as soon as possible.

Another benefit from the use of the serum therapy was found in the greatly diminished number of surgical operations, and their greater success when performed for diphtheritic complications. Martin concluded by stating that after five years of trial the serum remains the best treatment for diphtheria.

Two hundred and thirty-two thousand children have already been treated by it. Of these, 37,000 died, but more than 60,000 owe their lives to the immortal discovery of Behring and to the remarkable work of Roux.

THE BACTERIOLOGICAL EXAMINATION OF WATER.

Fraenkel stated that the bacteriological examination of water has two uses: (1) To find pathogenic organisms, especially typhoid and cholera; (2) to determine by comparative analyses whether a filter or other method for purifying water is effective.

The general sentiment of the section as expressed was that it is almost impossible to pass judgment upon the potability of a water by chemical and bacteriological examination. Many other conditions must be taken into account.

The bacteriological and chemical laboratory for the examination of water should not be bounded by four walls, but should include a study of the source, the watershed, and all the conditions that might influence the water. An examination of a water made to-day might find a potable liquid, whereas to-morrow it might be contaminated with cholera, typhoid, etc.

Calmette emphasized the point that water should be sterilized before use—that is the surest way to prevent the propagation of disease by this medium.

Sand filters have done much good, but they are not perfect, and may be, or often should be, supplemented by a process of sterilization. For this purpose he especially recommends ozone. It has been found by the commission, including Roux and Calmette, that ozone freshly prepared and added to water will quickly destroy all organism, excepting an occasional subtilis spore. The ozone also oxidizes the organic matter and finally disappears, leaving no trace. The method, therefore, has the advantage over other chemical methods of purification, that no foreign substance remains in the water. Gaertner expressed the opinion that too much importance has been attached to the finding of the colon bacillus in a water. Such a water is not necessarily nonpotable. He examined the dejecta of a menagerie and found the same colon bacillus in the tiger, elephant, ostrich, etc, and argued that as it is so widespread in nature it is going too far to always suspect typhoid because we find the colon bacillus.

The section unanimously passed a resolution to the effect that all governments should take steps to prevent the contamination of water courses, both from industrial and other sources, and that special protection should be enforced to prevent the contamination of drinking waters, and any such water that is suspected or could readily be contaminated should be sterilized.

TYPHOID.

Vaillard expressed the opinion that there may be various races of the bacillus typhosus. He found organisms in water that varied in but one particular from the text-book organism. He used Elsner's medium to isolate the bacillus from water, and found no difficulty in doing so. Some of these organisms, he stated, do not agglutinate.

In reply Gruber stated that there may be various races of the typhoid bacillus, but no one can say an organism is the bacillus typhosus unless it agglutinates in a certain time and in certain dilutions. Elsner's method is of little use and seldom succeeds. The typhoid organism is very hard to find in water—in fact, if many other organisms are present it is practically impossible.

Loeffler stated that he preferred gelatin—a gelatin potato without the potassium iodide—for this purpose.

Widal gave it as his opinion that a good method for finding the typhoid bacillus in water does not exist. He considers that there are no races or varieties of the bacillus typhosus such as the colon group. Of the many typhoid organisms he has studied from every part of the world he finds them constant in cultural and other characteristics. They always agglutinate.

Dunbar stated that he found the typhoid bacillus in a well at Cuxhaven. The people there drink rain water until the fall and then use this well. There were 20 cases of the disease in the neighborhood; doubtless from drinking the infected water. He, also, has abandoned Elsner's method and uses gelatin or gelatin potato.

Gruber reaffirmed that the agglutinative property has no relation to virulence.

THE PRESERVATION OF FOOD STUFFS.

It was resolved by the section that the addition of a chemical antiseptic of any kind to fresh food as a preservation should be prohibited. Heat (sterilization) or cold (refrigeration) are the best means of preserving fresh food.

The section was also of the unanimous opinion that formol, salicylic acid, sulphites, etc., should not be used to preserve food stuffs.

Some foods being preserved in salt and some by smoke or other processes not injurious to health, it was difficult to formulate a proposition to exclude all chemical or foreign preservations.

It was the opinion of some, especially Fraenkel, of Halle, that only those chemicals known to be harmful should be prohibited by law, and that every case of preserved food should have plainly marked upon it the process of manufacture and the amount and kind of any preservative it may contain.

A resolution was unanimously passed that all foods, especially meat preserved in cans and sterilized by heat or other methods of conservation, should have the date (the day and month) of its manufacture stamped on the box.

REPORT ON THE TWENTY-EIGHTH ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

By Asst. Surg. DONALD H. CURRIE.

TREASURY DEPARTMENT, M. H. S.,
HYGIENIC LABORATORY,
Washington, October 31, 1900.

SIR: I have the honor to submit the following report of the twenty-eighth annual meeting of the American Public Health Association, held at Indianapolis, Ind., October 22 to 26, inclusive.

I arrived in Indianapolis October 19 and applied for space for our exhibit the same day. We were assigned a large room near the hall in which the convention was to assemble. This location was very favorably situated, and had the advantage of being separated from the other exhibitors, thus permitting us to lock up our exhibit each night and removing the necessity for packing and unpacking daily.

The traveling laboratory arrived in good condition. The breakage of one of the handles on chest No. 3 constituted the sole damage received during shipment. I would recommend that in future handles of wrought iron alone be used.

We placed the laboratory outfit upon tables arranged along one side of the room, and, to facilitate demonstration, arranged, as nearly as possible, the articles in the order in which they would be used in practical work. The empty chests were placed along the opposite side of the room, open for inspection.

The exhibit was kept open to visitors from 9 a. m. to 5 p. m., and for an hour before the beginning of the several entertainments given in the evenings.

The laboratory attracted much attention during the whole meeting, both from the members of the association and visitors from the city. Neither our own observations, nor the close examinations the exhibit received from some of the most prominent bacteriologists of the country, showed it to be in any way deficient as a practical laboratory for the purpose intended.

My duties were such that I was unable to hear many of the papers read, and therefore can only give a partial report upon the proceedings of the association.

Several interesting papers were presented upon the bacillus coli communis, its variations, significance from a sanitary standpoint, etc.

Major Reed, surgeon, U. S. Army, read an account of the work of the commission of the U. S. Army detailed to investigate the etiology of yellow fever. His paper consisted of two parts. In the one he stated he was unable to find bacillus icteroides in 18 cases of supposed yellow fever; in the second part he advanced the theory that the mosquito (especially a species of culex common in Habana) was the intermediary host of the yellow-fever organism. The evidence upon which he based his claims was that of 11 nonimmunes bitten by mosquitoes which had previously fed upon yellow-fever patients, two contracted the disease. Of these two, one alone can be considered as being of any value as evidence in support of his claim.

Dr. Bracken read an interesting paper upon leprosy and recommended that a national asylum be established.

Surgeon Woodward, United States Marine-Hospital Service, read a paper upon the foreign work of this Service.

At the close of the meeting the laboratory was repacked and shipped to the Bureau. It arrived in good condition.

Respectfully,

Donald H. Currie,
Assistant Surgeon, M. H. S.

Surgeon-General Marine-Hospital Service.

Respectfully forwarded.

H. D. Geddings,
Passed Assistant Surgeon, M. H. S., Acting Director.

ACCOUNTS.

VOUCHERS PASSED FOR PAYMENT AND SETTLEMENT.

During the year approximately 16,588 vouchers were passed by this division for payment or settlement.

The following is a statement of these vouchers in detail:

Paid by G. A. Bartlett, disbursing clerk	14,874
Referred to Auditor for examination and settlement	525
Paid by collector of customs (as special disbursing agent)	508
Porto Rico, paid by collector of customs (as special disbursing agent)	352
Hawaii, paid by collector of customs (as special disbursing agent)	329

FINANCIAL STATEMENT.

RECEIPTS AND EXPENDITURES, UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FISCAL YEAR ENDED JUNE 30, 1901.

The balance of the Marine-Hospital fund available at the commencement of the fiscal year was $773,313.42, and the receipts from all sources $960,757.11. The expenditures were $1,007,317.79.

Summary, Marine-Hospital fund.

Balance July 1, 1900		$773,313.42
Receipts, tonnage tax		904,046.18
Repayment, care foreign seamen, etc	$6,198.60	
Repayment, medical and hospital supplies quarantine stations, etc., and including Cuba, Porto Rico, and Philippine Islands	50,512.33	
		56,710.93
Total		1,734,070.53

Expenditures:		
Maintenance of stations, purveying depot, etc.[a]	$971,217.79	
Salaries, Supervising Surgeon-General's Office	36,100.00	
Total		$1,007,317.79
Balance July 1, 1901		726,752.74

Statement of appropriations, quarantine service, 1901.

Appropriation July 1, 1900	$235,000.00
Deficiency appropriation (act March 3, 1901)	18,000.00
Repayment, care foreign seamen, etc	816.76
Total available	253,816.76
Expenditures July 1, 1900, to June 30, 1901	250,171.94
Balance July 1, 1901	3,644.82

Summary of expenditures, July 1, 1900, to June 30, 1901.

Name of station.	Maintenance of stations, officers' salaries, miscellaneous expenses.	Medical and hospital supplies.	Total.
Reedy Island	$23,319.72	$1,677.42	$24,997.14
Delaware Breakwater	4,932.23	382.06	5,314.29
Cape Charles	17,060.49	518.74	17,579.23
Cape Fear	6,705.10	410.86	7,115.96
Brunswick	5,345.42	289.38	5,634.80
South Atlantic	13,208.76	497.58	13,706.34
Tortugas	10,916.77	94.03	11,010.80
Gulf	20,553.77	2,546.14	23,099.91
Savannah, Ga	14,428.15	1,927.85	16,356.00
San Diego, Cal	7,169.78	32.50	7,202.28
San Francisco	48,112.86	1,051.84	49,164.70
Port Townsend	15,094.64	1,324.23	16,418.87
Columbia River	9,299.94	2,559.64	11,859.58
Porto Rico	36,911.59	129.44	37,041.03
Miscellaneous	1,041.33	1,629.68	2,671.01
Outstanding[a]	1,000.00	----------	1,000.00
Total	235,100.55	15,071.39	250,171.94

[a] Part estimated.

Quarantine service, 1901.

REPAIRS OF VESSELS.

Deficiency appropriation, act March 3, 1901:	
Amount of appropriation	$22,000.00
Amount expended and estimated	22,000.00

TERRITORY OF HAWAII.

Amount of appropriation (act June 6, 1900)	$75,000.00
Amount expended and authorized	75,000.00

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[a] Of the total expenditures at stations about $80,000 was on account of items for which special appropriations were made in previous years, but not made this year, being paid for out of the Marine-Hospital fund, viz: Fuel, lights, and water, $40,000; repairs of buildings, $35,000; furniture and repairs, $5,000.

Preventing the spread of epidemic diseases.

Summary of expenditures, July 1, 1900, to June 30, 1901:		
Balance July 1, 1900		$468,581.96
Repayment, medical and hospital supplies, etc., including Cuba, Porto Rico, and Philippine Islands		6,233.26
Total available		474,815.22
Expenditures, July 1, 1900, to June 30, 1901:		
Foreign medical service: Salaries, traveling expenses, and miscellaneous	$46,732.85	
Sanitary inspection in United States: Salaries, traveling expenses, and miscellaneous, including investigation of plague, San Francisco, Cal. ($15,318.24)	33,279.01	
Yellow fever: Maintenance of detention camps, etc., as precaution against outbreak of yellow fever; medical and hospital supplies, salaries, and miscellaneous	52,735.46	
Texas border inspection, account yellow fever and smallpox in Mexico	12,178.41	
Philippine Islands, medical and hospital supplies, disinfecting apparatus, etc. (Marine-Hospital Service to be reimbursed)	3,365.85	
Nome and Egg Island, Alaska: Subsistence and miscellaneous supplies, account of smallpox	21,431.42	
Leprosy investigation (act of Congress March 2, 1899)	1,606.19	
Savannah, Ga.: Rent of station and miscellaneous	1,057.58	
Savannah, Ga.: Salaries and miscellaneous, account of smallpox	2,506.64	
Key West, Fla.: Services of schooner; removal of station	360.00	
Total		175,253.41
Balance		299,561.81
Appropriation (act March 3, 1901)		500,000.00
Total balance July 1, 1901		799,561.81

Appropriations for marine hospitals, act March 3, 1891.

Mobile, Ala., amount of appropriation	$1,500.00
Amount expended	1,500.00

Appropriations for quarantine stations, act August 1, 1888.

Cape Charles Quarantine:	
Balance July 1, 1900	$2,215.48
Balance July 1, 1901	2,215.48

Chesapeake Bay Quarantine Station, act March 3, 1893.

Balance July 1, 1900	$6,935.00
Balance July 1, 1901	6,935.00

Gulf Quarantine Station, acts March 3, 1891, August 5, 1892, and August 18, 1894.

Balance July 1, 1900	$1,347.57
Balance July 1, 1901	1,347.57

South Atlantic Quarantine Station, act March, 1895 (alteration to steamer for hospital barge).

Balance July 1, 1900	$1,000.00
Balance July 1, 1901	1,000.00

Brunswick, Ga., Quarantine Station, act June 4, 1897.

Balance July 1, 1900	$4.75
Balance July 1, 1901	4.75

Brunswick, Ga., Quarantine Station, act June 11, 1896.

Balance July 1, 1900	$340.12
Balance July 1, 1901	340.12

Gulf Quarantine Station, act June 11, 1896.

Balance July 1, 1900	$127.46
Balance July 1, 1901	127.46

Appropriations for quarantine stations, act March 3, 1899.

Reedy Island Quarantine Station:	
Balance July 1, 1900	$0.57
Balance July 1, 1901	.57
Brunswick, Ga., Quarantine Station:	
Balance July 1, 1900	$51.33
Balance July 1, 1901	51.33
Gulf Quarantine Station:	
Balance July 1, 1900	$19,972.20
Expended to June 30, 1901	19,133.14
Balance July 1, 1901	839.06

Port Townsend Quarantine Station, act June 11, 1896.

Balance July 1, 1900	$372.70
Balance July 1, 1901	372.70

Delaware Breakwater Quarantine Station, act June 4, 1897.

Balance July 1, 1900	$2.00
Balance July 1, 1901	2.00

South Atlantic Quarantine Station, act June 4, 1897.

Balance July 1, 1900	$953.02
Balance July 1, 1901	953.02

Delaware Breakwater Quarantine Station, act July 1, 1898.

Balance July 1, 1900	$12.25
Balance July 1, 1901	12.25

Cape Charles, Va., Quarantine Station, act July 1, 1898.

Balance July 1, 1900	$15.00
Balance July 1, 1901	15.00

Brunswick, Ga., Quarantine Station, act July 1, 1898.

Balance July 1, 1900	$2.00
Balance July 1, 1901	2.00

Gulf Quarantine Station, act July 1, 1898.

Balance July 1, 1900	$119.76
Balance July 1, 1901	119.76

Astoria, Oreg., Quarantine Station, act July 1, 1898.

Balance July 1, 1900	$43.29
Balance July 1, 1901	43.29

San Francisco quarantine, fumigating steamer.

Balance July 1, 1900	$1,016.32
Balance July 1, 1901	1,016.32

Key West quarantine, disinfecting machinery.

Balance July 1, 1900	$900.40
Balance July 1, 1901	900.40

Appropriations, act June 6, 1900.

Marine hospitals (amounts transferred to Supervising Architect):	
Cleveland, Ohio	$5,000.00
Boston, Mass	4,500.00
Detroit, Mich	3,000.00
Mobile, Ala	2,500.00
San Francisco, Cal	8,000.00
St. Louis, Mo	1,000.00

Quarantine stations, act June 6, 1900 (amounts transferred to Supervising Architect).

Reedy Island quarantine	$8,000.00
Delaware Breakwater	7,250.00
Cape Charles, Va	1,250.00
Brunswick, Ga	20,000.00
Gulf	7,150.00
South Atlantic	3,000.00
San Diego, Cal	23,750.00
San Francisco, Cal	131,700.00

Key West and Mullet Key, act June 6, 1900.

Amount of appropriation	$125,000.00
Amount transferred to Supervising Architect	50,000.00
Balance July 1, 1901	75,000.00

Savannah, Ga., act June 6, 1900.

Amount of appropriation		$30,000.00
Amount transferred to Supervising Architect	$9,500.00	
Amount expended for station, etc	20,217.80	
		29,717.80
Balance July 1, 1901		282.20

Washington, D. C. (laboratory building).

Amount of appropriation		$35,000.00
Transferred to Supervising Architect	$34,925.00	
Expended for plans, etc	75.00	
		35,000.00

ADMINISTRATIVE DETAILS—CIRCULAR LETTERS, ETC.

The following circular letters have been prepared and issued during the year:

Circular Letter Relative to Requisitions for Supplies.

To commissioned officers and acting assistant surgeons, U. S. Marine-Hospital Service:

Hereafter all requisitions for supplies and all proposals must be rendered in duplicate.

Requisitions showing the "quantities on hand," as "serviceable" or as "worn-out," must also show that articles noted as "worn-out" have been inspected and condemned by an inspector, or in exceptional cases, where an inspection is impracticable at the time, a very full description of the articles must be given, date when purchased, and how they became unserviceable.

Requisitions for articles not already on hand must be accompanied by a letter fully explaining their necessity, in order to receive attention.

Walter Wyman,
Surgeon-General, M. H. S.

Circular Letter Relative to Issue of New Requisition Blanks.

To commissioned officers of the Marine-Hospital Service:

You are informed that a new edition of special requisition blank (Form 1908) has been prepared and is ready for issue by the Treasury Department (Division of Stationery, Printing, and Blanks), and you are directed to make special requisition (Form 1906) for the quantity required for your station, upon receipt of which you will destroy the old blank (Form 1908).

In this connection your attention is called to Section XLVI, page 34, paragraph 6, Instructions to Custodians of Public Buildings, 1900, as follows:

"No articles of furniture or fixtures must be transferred from one office or room to another without previous authority from the Department."

You will, without delay, prepare and forward the description and location of articles of furniture heretofore chargeable to the appropriation "Furniture and repairs of same for public buildings," as provided in paragraph 3, Section XLVI, Instructions to Custodians of Public Buildings, as follows:

"The returns must specify the office, room, and story of the building in which the articles are or were located, and the number and description of the articles, care being taken to give the date of authority to purchase, sell, drop, or transfer, and the cost of the articles."

Your attention is also called to paragraph 99, page 17, Regulations, M. H. S., 1897, as follows:

"Articles of furniture when purchased for and assigned to the specified quarters of a commissioned officer shall not be changed to other quarters without special authority from the Bureau."

Strict compliance with the above regulations is required. You are directed to acknowledge receipt of this letter.

Respectfully,

Walter Wyman,
Surgeon-General, M. H. S.

Circular Letter Relative to the Treatment of Infected Wards.

To commissioned medical officers and acting assistant surgeons, U. S. Marine-Hospital Service:

You are hereby directed to observe the following rules in regard to the treatment of infected wards:

Whenever a patient suffering from a communicable disease has been under treatment in any ward or other portion of a United States marine hospital, or in any ward of a private or municipal hospital used exclusively for the treatment of patients of this Service, it shall be the duty of the medical officer in charge thereof to cause said ward or apartment to be disinfected as soon as practicable after the recovery, death, or removal of the patient; the method of disinfection most suitable in each case to be determined at the discretion of the medical officer.

Tubercle of the lungs shall be regarded as a communicable disease within the meaning of this letter, and whenever it becomes necessary for patients suffering from the above-named disease to occupy a hospital ward for an indefinite period, said ward shall be disinfected at least once a month.

Please acknowledge receipt of this letter.

WALTER WYMAN,
Surgeon-General, M. H. S.

CIRCULAR LETTER—TREATISE ON MILITARY HYGIENE TO BE FURNISHED OFFICERS.

To commissioned medical officers, U. S. Marine-Hospital Service:

You are informed that a work on the Theory and Practice of Military Hygiene, by Edward L. Munson, M. D., will be furnished to the regular relief and quarantine stations of the Service, which are under the command of commissioned officers. As the subjects discussed in this treatise, especially the sections dealing with general hygiene, physical examinations, management and sanitation of hospitals and camps, food and water supply, disinfection, etc., have a direct bearing upon the work of the Service, medical officers appearing for examination preliminary to promotion may expect to be examined on the topics discussed therein. Medical officers not attached to regular stations may obtain this work on special requisition.

You are directed to acknowledge the receipt of this letter.

WALTER WYMAN,
Surgeon-General, M. H. S.

DIVISION OF MARINE HOSPITALS AND RELIEF.

REPORT OF DIVISION OF MARINE HOSPITALS AND RELIEF.

By L. L. Williams,

Surgeon, Marine-Hospital Service, in Charge.

The Service owns and operates 21 marine hospitals, and operates 2 additional hospitals in leased buildings (New York, N. Y., and Dutch Harbor, Alaska). There are, in addition, 115 relief stations where patients receive treatment.

PATIENTS TREATED.

During the year 58,381 patients were treated by this Service:

Hospital patients	13,341
Out-patients	45,040
Days hospital relief furnished	346,844

AID TO OTHER SERVICES.

Revenue-Cutter Service.—During the year 932 applicants for enlistment were examined; 777 passed, and 155 were rejected for physical defects.

Steamboat-Inspection Service.—During the year 1,644 pilots were examined as to their visual capacity. Of this number, 1,550 were passed, and 94 rejected on account of visual defects.

Life-Saving Service.—There were examined during the year 1,445 keepers and surfmen, of whom 81 were rejected as physically unfit to perform the duties required.

Light-House Service.—Ten applicants for appointment in this Service were physically examined during the year. Of this number, 2 were rejected.

Coast and Geodetic Survey.—During the fiscal year 30 applicants for enlistment in this Service were examined. Of this number, 9 were rejected as physically unfit.

Navy Department.—Twenty-four applicants for positions on navy colliers were physically examined during the year and 1 rejected.

OTHER EXAMINATIONS.

Twenty-two applicants for appointment as hospital steward in the Marine-Hospital Service were physically examined and 1 rejected.

During the year 310 merchant seamen were examined as to their physical fitness for sea duty.

NEW RELIEF STATIONS.

Relief stations of the second class have been established during the fiscal year at the ports of Honolulu, Hawaii, San Juan, P. R., and Ponce, P. R.

SEAMEN EMPLOYED ON NAVY COLLIERS ENTITLED TO RELIEF.

Under a decision rendered by the Assistant Comptroller of the Treasury, as set forth in the following correspondence, seamen employed on navy colliers are entitled to the benefits of the Marine-Hospital Service:

DEPARTMENT OF THE NAVY, BUREAU OF NAVIGATION,
Washington, D. C., June 24, 1901.

SIR: The Bureau forwards herewith a telegram signed "Thompson," presumably from Theodore S. Thompson, pay inspector, U. S. Navy, in charge of the Navy pay office at San Francisco, Cal.

2. The circumstances in this case are as follows: Albert Hilton, while serving as third officer of the navy collier *Nero*, was injured in the performance of his duties on board the *Nero* at sea, and upon her arrival at Norfolk was transferred to the marine hospital at that port and was treated there up to the time of his discharge, when the Bureau settled with him by paying him an additional one month's pay and transferring him back to San Francisco, the port of his enlistment. At this time Hilton was told to visit the surgeon in charge at the headquarters of the Marine-Hospital Service at Washington and ascertain whether he could not receive further treatment at the marine hospital in San Francisco upon his arrival there, and if he was informed that such treatment could not be received to return to this Bureau, where his case would be given further consideration.

3. Upon his arrival in San Francisco he informed the Bureau of Navigation, Navy Department, that he would not be received in the marine hospital at San Francisco excepting by application from this Bureau, whereupon a representative of this Bureau interviewed Surgeon Williams, of the Marine-Hospital Service, and upon recommendation of Surgeon Williams the Bureau wired the surgeon in charge marine hospital, San Francisco, as follows: "Albert Hilton was injured while serving as third officer aboard collier *Nero*, and was treated in marine hospital, Norfolk. Consider him eligible now for treatment marine hospital;" and to Albert Hilton as follows: "Apply surgeon marine hospital for treatment:" and received to-day the inclosed telegram, signed "Thompson."

4. The Bureau incloses a copy of the decision of the Comptroller of the Treasury Department in which it will be seen that the Comptroller holds that the seamen serving on the navy colliers are entitled to all the benefits accorded to American seamen in the merchant-marine service, and it is this Bureau's opinion that Hilton is entitled to treatment in the marine hospital at San Francisco under regulations for the U. S. Marine-Hospital Service.

5. If you concur in this opinion, the Bureau will thank you if you will kindly wire the surgeon in charge marine hospital at San Francisco to admit Hilton for further treatment.

6. There is no appropriation for the Navy to which treatment of this man could be charged, as he is not an enlisted man in the Navy, but a discharged merchant seaman.

Respectfully,

WM. S. COWLES,
Acting Chief of Bureau.

SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

[Inclosures.—Telegram.]

SAN FRANCISCO, CAL., *June 22, 1901.*

NAVIGATION, *Navy Department, Washington, D. C.*

Referring Bureau's telegrams to Albert Hilton, late *Nero*, and marine hospital, surgeon hospital demands formal application from Bureau for Hilton's admittance, and guaranty of expenses. Please answer to hospital.

THOMPSON.

TREASURY DEPARTMENT,
OFFICE OF COMPTROLLER OF THE TREASURY,
Washington, June 5, 1901.

SIR: I have, by your reference, the papers relating to the payment of $108.50, covering cost of transportation from London, England, to New York, N. Y., and one month's additional wages, of Adolph Bergner, a steward on the U.S. Navy collier *Nero*. You desire my decision as to whether the amount in question is a proper charge against the Navy Department, or whether it is not a charge against the fund for the maintenance and transportation of destitute American seamen. A decision is further requested upon the general question of the right of seamen on the navy colliers to relief as merchant seamen, as these men are not enlisted men of the Navy, but contract with the master of the vessel and sign shipping articles for merchant seamen in accordance with the navigation laws of the United States.

In reply I have to state that the facts presented are not sufficient to enable me to render a decision upon the payment of the amount expended for transportation in this particular case, nor upon the question of the payment of additional wages. The legality of such payments depends upon the manner of the man's discharge or separation from his vessel, and these facts are not given.

I am of the opinion, however, that American seamen on board vessels in the service of the United States, who sign shipping articles, as in the case of ordinary merchant seamen, and who are not regularly enlisted in the naval service, are entitled to all the benefits accorded to American seamen in the merchant marine service.

If a definite decision is desired upon the payment of these particular items, I shall be glad to take the matter up, at your request, upon a statement of facts showing the cause and manner of this man's discharge or separation from his vessel and the circumstances of his return to the United States.

All papers are returned herewith.

Respectfully,
L. P. Mitchell,
Assistant Comptroller.

The Secretary of the Navy.

HANDBOOK FOR SHIP'S MEDICINE CHEST.

A Handbook for the Ship's Medicine Chest, by Surg. George W. Stoner, Marine-Hospital Service, has been issued to the various relief stations for distribution to masters of vessels. This book is intended as a guide for masters of vessels in the emergency treatment of diseases and injuries occurring at sea, when skilled treatment is not obtainable. The writer has avoided the use of technical terms, and has prepared a manual which, it is believed, will materially contribute to an intelligent use of the ship's medicine chest, which forms a part of the equipment of all seagoing vessels.

PURVEYING DEPOT AT NEW YORK—REPORT OF THE MEDICAL PURVEYOR.

Sir: The following report of the operations of the purveying depot for the fiscal year ended June 30, 1901, is submitted for the information of the Bureau. The somewhat extended report of its installation and the record of its first year's operations in this city precludes the necessity of anything beyond a brief résumé of its annual operations.

During the past fiscal year the work of the depot was considerably augmented by reason of additional duties imposed upon it through the assumption by the Service of expenditures on account of miscellaneous appropriations covering expenditures on articles heretofore charged under the several items of fuel, lights, water, etc., furniture and repairs of furniture, and repairs and preservation of public buildings. This work, however, was carried on only for the first six months of the fiscal year, the order for its continuance having been canceled when the semiannual contracts for supplies were made in December. In all other respects the work of the depot was continued along lines heretofore marked out for it; but comparisons with the work of the previous years can not be made to entire satisfaction because of these differences in the amount and character of the work performed at various times within the fiscal year.

STAFF.

The working staff at this depot remains the same as at the close of the previous fiscal year, and the value of the services rendered, as enlarged by experience gained in the special character of the work done at this depot, permits me again to refer with satisfaction to their faithful and interested assistance. The increased amount shown for salaries over that of the previous fiscal year is explained by the fact that during the first part of the last fiscal year the working force at this depot had not been selected or appointed for some months following its installation. There has been no increase in numbers, however, during the past fiscal year.

FINANCIAL STATEMENT.

During the past fiscal year the total amount of bills rendered for expenses incurred by this depot is $161,737.28, as compared with the record of the previous year, $176,409.79. The expenditures of the past fiscal year have been divided into classes as follows:

Bills passed for supplies.

Dry goods, etc	$24,246.46
Carpets	2,916.68
Equipment, purveying depot	353.50
Surgical instruments and appliances	10,893.75
Microscopical, bacteriological, and photographic supplies	2,713.32
Rubber goods	2,456.99
Beds and bedding	8,648.22
Bottles	1,427.22
Toilet and wrapping paper	1,436.09
Wines and liquors	3,104.87
Flags	1,264.10
Aseptic hospital furniture, etc	5,997.25
Hospital stores	12,685.39
Books and journals	3,574.03
Miscellaneous articles, pharmacal implements, etc	2,097.84
Disinfectants	13,703.32
Operating expenses depot, rent, telephone, fuel, light, cartage, etc	10,342.99
Chemical glassware and apparatus	649.78
Station equipment	28,584.30
Medical supplies	24,641.18
Total	161,737.28

The above does not seem to call for any comment beyond stating that if comparison be made with similar table of the previous fiscal year it will show both increases and decreases in certain lines of purchases, which are explained by the fact that the necessities of the Service vary in particular things from year to year.

REIMBURSEMENTS.

The following is a summary of the purchases made for various branches of the Government service, and for the operations conducted by the Marine-Hospital Service in Cuba and the Philippine Islands. No separate statement is rendered for Porto Rico and Hawaii, which are now a part of the territory of the United States. Last year the total amount of reimbursements was $28,376.08, which, as I then stated, was "largely in excess of all my expectations on this subject;" but it will be noted that this year the amount has doubled, by which the net expenditures chargeable to the marine-hospital fund are reduced to $121,602.63, a sum within a few thousand dollars of the net amount expended during the previous fiscal year.

Reimbursement for supplies issued to other branches of the Service and other services.

Immigration Service	$5,364.19
Treasury Department	59.98
Coast and Geodetic Survey	1,721.63
Island of Cuba	13,724.56
Philippine Islands	9,647.77
Epidemic fund	7,723.22
Quarantine fund	18,383.54
	56,624.89
Net expenditures marine-hospital fund	105,112.39
Salaries	15,890.24
Commutation	600.00
Grand total	121,602.63

The net value of the stock on hand at the close of the fiscal year ended June 30, 1901, was $53,455.05.

SHIPMENTS.

The total output from this depot has increased over that of the previous fiscal year, both in the number of requisitions filled and in the total weight of the packages shipped. The following table gives a detailed summary of the work done:

REQUISITIONS FOR FISCAL YEAR 1901.

Quarantine stations and steamers		110
Epidemic stations		37
Hospital stations, first, second, third, and fourth class		625
Colonial		83
Immigration Service		10
Coast and Geodetic Survey		9
Filled by Bureau (vaccine)		87
		961
Number of packages		11,005
Total weight	pounds	676,325

INSPECTIONS.

The system of inspection of supplies for this Service, which is being carried on at the depot, insures, with one important exception, the supplies required by the Service in accordance with specifications and proposals. This exception, to which I refer, is that of medical supplies, and during the past fiscal year I have made specific recommendation that facilities should be devised for the examination of drugs and chemicals in order to ascertain their purity and standard as compared with pharmacopœial requirements. I am satisfied that this should be done without further postponement. In many instances bids are made for drugs and chemicals which are so dangerously below the market prices that doubt is necessarily cast upon their purity. This depot has no facilities for the performance of delicate laboratory tests, and the character of the work carried on here does not render it a suitable place for that class of professional labor.

Respectfully submitted.

Chas. E. Banks,
Surgeon and Medical Purveyor, M. H. S.

Surgeon-General, Marine-Hospital Service.

SANATORIUM FOR CONSUMPTIVES, FORT STANTON, N. MEX.—REPORT OF MEDICAL OFFICER IN COMMAND.

Marine-Hospital Service,
Office of Medical Officer in Command,
Fort Stanton, N. Mex., November 29, 1901.

Sir: In accordance with directions contained in Bureau letter, October 18, 1901, I have the honor to make the following report of the operations of the Service at this station for the fiscal year ended June 30, 1901. It is necessary for a proper presentation of the subject to include statistics of the farm, garden, etc., for the season of 1901 instead of for the fiscal year.

Clinical report, July 1, 1900, to June 30, 1901.

Number of cases under treatment July 1, 1900			47
Number of cases admitted during the year			105
			152
Discharged:			
Cured		12	
Improved		43	
Not improved		6	
Died		17	
			78
Under treatment June 30, 1901			74
Approximate average duration of disease	months		20
Cases complicated with syphilis			24
Cases complicated with malaria			23

Of the 47 cases under treatment July 1, 1901, 12 were good cases on admission, 14 were fair cases on admission, 21 were bad cases on admission.

Their disposition was as follows:

Discharged:	
Cured	8
Improved	7
Not improved	3
Died	8
	26
Remaining June 30, 1901	21
Total	47

Character of 105 cases admitted:	
Good	32
Fair	19
Bad	54

Their disposition was as follows:

Discharged:	
Cured	4
Improved	34
Not improved	3
Died	9
	50
Total remaining June 30, 1901	55
Total	105

REPORT OF FATAL CASES.

Patient.	Age.	Condition of lungs on admission.	Previous duration of disease.	Complications.	Cause of death.	Necropsy.	Days in hospital, Fort Stanton, N. Mex.
Holm	27	Fair	4 years	Malaria	Tuberculosis	Pulmonary and intestinal tuberculosis.	259
Pence	45	Good	2 months	Malaria, syphilis, acute nephritis.	Acute nephritis.	Lungs cured, congested kidneys, gummata.	203
Peterson, I	28	Fair	6 months	Meningitis	Tubercular meningitis.	Tuberculosis of lungs and brain.	85
Tobin	60	Good	2 months	Carcinoma	Carcinoma	Carcinoma of liver and stomach, lungs healed.	179
Peterson, A	25	Bad	1 year		Tuberculosis	Pulmonary and intestinal tuberculosis.	290
Rollins	35	do	9 months	Hemorrhage	Pulmonary hemorrhage.	Lungs healing	235
Tracy	27	do	2 years	Malaria	Tuberculosis	Pulmonary and intestinal tuberculosis.	358
McLaughlin	36	do	13 months	Syphilis, ascites.	do	Amyloid of intestines and pulmonary tuberculosis.	181
Conroy	32	do	12 months	Syphilis	do	Adrenal tuberculosis.	65
Rankman	45	do	4 months	Malaria, larynx involved.	do	Tuberculosis of larynx.	194
Flynn	42	do	21 months	do	do	do	135
Cummings	30	do	3 years	do	do	Pulmonary and laryngeal tuberculosis.	107
Vaun	43	do	14 months	Syphilis	do	Intestinal tuberculosis.	310
Hulett	26	do	7 months	Malaria, larynx involved.	do	Intestinal and laryngeal tuberculosis.	64
Wilson	20	do	4 months	Syphilis	do	Intestinal tuberculosis.	105
Bartchy	38	do	7 months	Malaria	do	Pulmonary tuberculosis.	14
Ennuum	36	do	do	do	do	do	13

Total number of fatal cases, 17, of which 15 were complicated with one or more other diseases, as follows:

Malaria	9
Syphilis	5
Laryngitis	4
Carcinoma	1
Acute nephritis	1
Meningitis	1

Included in the total fatal cases there is 1 from cancer and 1 from acute nephritis. In these cases the lungs were found to be practically healed at the necropsies; of the cases discharged "improved" 5 became "cured" cases while employed as attendants. Attention is invited to the large proportion of "bad" cases, and results must be judged with this fact in view.

The following are classed as "bad" cases in this report:

(1) Those in which there is much lung tissue involved; approximately two-thirds to one entire lung or a considerable portion of each lung.

(2) Those in which there is involvement of other tissues than the lungs or in which malaria complicates.

(3) Those in which there is evidence of rapid advancement of the tubercular process, irrespective of extent of tissue involved.

The cases complicated with syphilis as a rule run a favorable course, while those having malaria do not. All the syphilitic cases contracted that disease (apparently) before tuberculosis, and this complication appears to be somewhat to the patients' advantage. Malaria, on the contrary, exerts a baneful influence when complicating tuberculosis.

Every effort has been made to prevent infection of the station, but in spite of the most earnest representations of the danger of the practice, some patients will spit on the ground surreptitiously. All such sputum has been, when discovered, carefully destroyed, and finally the patients were mustered and informed in the most emphatic language that anyone convicted of spitting anywhere except in his sputum cup would be instantly dismissed. This rule has apparently had the desired effect and there have been no known infractions. Remembering that many of the patients admitted to this sanatorium are ignorant and do not readily grasp the idea of danger in the common practice of spitting at will without regard to time, place, or circumstance, it seems advisable to make obedience to sanitary rules as easy as possible. I have therefore to recommend the entire discontinuance of the use of the metal or other sputum cups requiring steam disinfection and the substitution of cups, both pocket and bedside, made of paper or other material easily destructible by fire. Disinfection of sputum by steam is both expensive and offensive. Of course steam disinfection for bedding, etc., must continue to be employed. Effort is being made to devise a practical destructible pocket cup, of which later report will be made.

WATER SUPPLY AND IRRIGATION DITCHES.

The large reservoir is fed by Ditch No. 1, 3 miles long. Much labor is necessary to keep this ditch in order, but this is cheaper than pumping, and the water, while frequently muddy, is softer than the well water supplied by the gasoline engine.

Ditches Nos. 2 and 3 supply water for irrigating the gardens and farm, respectively. These ditches require less care than No. 1, but all the ditches need extensive overhauling, and the dam for Ditch No. 3 must be rebuilt before next spring.

REPORT OF FARM.

Labor and seed		$459.56
Products of farm:		
65 tons oat hay, valued at $20	$1,300.00	
110 tons alfalfa hay, valued at $15.50	1,705.00	
125 bushels corn, valued at 75 cents	93.75	
25 tons corn fodder, valued at $15.50	387.50	
		3,486.25
Showing profit of		3,026.75

REPORT OF GARDEN.

The garden has produced the following:

Beans, string, 269 pounds, at 3 cents	$8.07
Beans, dry, 275 pounds, at 5½ cents	15.12
Beets, 1,166 pounds, at 2½ cents	29.15
Cabbage, 9,604 pounds, at 3 cents	288.12
Cauliflower, 58 pounds, at 5 cents	2.90
Cantaloupes, 1,395 pounds, at 2 cents	27.90
Celery, 955 pounds, at 2 cents	19.10
Cucumbers, 8,312 pounds, at 1 cent	83.12
Lettuce, 430 pounds, at 5 cents	21.50
Watermelons, 10,275 pounds, at 1 cent	102.75
Okra, 96 pounds, at 10 cents	9.60
Onions, 2,517 pounds, at 4 cents	100.68
Pease, green, 522 pounds, at 6 cents	31.32
Radishes, 866 pounds, at 3 cents	25.98
Rhubarb, 20 pounds, at 10 cents	2.00
Squashes, 5,845 pounds, at 2 cents	116.90
Tomatoes, 830 pounds, at 5 cents	41.50
Turnips, 9,784 pounds, at 1 cent	97.84
Parsnips, 900 pounds, at 3 cents	27.00
Corn fodder, 8 tons, at $15	120.00
Hay, 75 pounds	.50
Bean straw, 595 pounds	4.00
Pea-vine hay, 60 pounds	.50
Corn, sweet, 8,326 ears, at 1 cent	83.26
	1,256.91
Cost of garden (labor and seed)	530.91
Showing profit for garden of	726.20

REPORT OF DAIRY.

The dairy herd now (November 30) consists of 46 Jersey cows, 1 Holstein cow, 4 Jersey bulls, and 13 heifer yearlings and calves. Nine Jersey steers (yearlings) and 1 Holstein steer are being fattened for beef. Twenty-six of these cows and 3 bulls were purchased in January, 1901.

The product of milk for the fiscal year was 13,245 gallons and the cost of production 21½ cents per gallon. The market price of milk in this locality is 40 cents per gallon and the supply is very limited, so that the maintenance of a dairy is an absolute necessity as well as economical. In addition to the milk the dairy is now producing a portion of the butter supply (75 pounds in November, 1901). The last cows purchased were not of high grade and did not add so largely to the milk supply as had been expected, but there seems no probability that further purchases of milk cattle will become necessary, since by selection from the natural increase the milk herd can be recruited and added to as the needs of the station increase.

RANGE CATTLE AND HOGS.

One hundred head of range cattle were purchased in the spring of 1901 at a cost of $1,990; 20 of these are steers, which with the Jersey steers will furnish the station with fresh beef during the last quarter of the current fiscal year (1902). Their value at contract price will be approximately $1,200, leaving on hand 80 range cattle, the net cost of which will thus be reduced to approximately $800.

The station has a drove of 105 hogs of all ages. They have been raised at no expense (except for fences, pens, etc.), having been fed on the kitchen refuse. Twenty-five of these hogs are now being fattened on station-raised corn, and when butchered in December will yield about 5,000 pounds of ham, bacon, sausage, and lard, and materially reduce the expenditures for these products. There seems no reason why all pork products should not be home raised in the future. During the fiscal year 730 pounds of home-grown pork has been used.

CHICKENS AND HARES.

The raising of chickens has not heretofore proven profitable, partly because young hens could not be purchased and partly because the incubator was a complete failure. This season the old-fashioned method of hatching was used with very good results. Beginning the season with 40 chickens, we now have 181, having killed for subsistence 50 and supplied the hospital with 138 dozen fresh eggs.

The Belgian hares have done well. One hundred and forty were on hand at the beginning of the fiscal year, 305 have been killed for subsistence, and the number now on hand is 324. Hares are now put on the bill of fare twice each month. They will weigh, dressed, from 3 to 4 pounds each, so that the value of those used is about $100. A sufficient number of guinea pigs are bred in the chicken yard for the experimental work of the station.

From this time on the value of the hares slaughtered for food will about pay the expenses of the chicken and hare yard, leaving the poultry as profit. I have recently added to the poultry yard a number of pigeons, which may be raised without cost and will serve to furnish a welcome addition to the diet list for very sick patients.

DONATIONS.

It is desired to make acknowledgment of the following donations made during the fiscal year:

Miss Helen M. Gould, of New York (through the International Committee of the Young Men's Christian Association), 500 bound volumes for the library, 1 handsome music box, 1 punching bag and gloves, 1 base ball outfit, and a number of indoor games.

Seaman's Friend Society, of New York, 500 bound volumes for library.

Mr. W. P. Thompson, of Capitan, N. Mex., 2 golf outfits.

Officers of the Service have donated 2 golf outfits and sundry in and out door games; others interested in the welfare of the sailors have donated books, periodicals, and newspapers, and the library now contains 1,252 volumes of good, wholesome books, 965 of which are nicely bound.

I have had a golf course laid out as a hygienic measure and it is used every day by from six to a dozen patients. It is regretted that many donors of books failed to give their names, and that in consequence specific acknowledgment can not be made.

Respectfully,

P. M. Carrington,
Surgeon, M. H. S., in Command.

Surgeon-General Marine-Hospital Service.

CARE OF SEAMEN.

The provisions made for the care of seamen for the fiscal year ending June 30, 1901, at all ports where relief is regularly furnished are set forth in Department circular No. 81, dated June 6, 1900, and for the fiscal year ending June 30, 1902, in Department Circular No. 67, dated June 12, 1901.

REPORTS OF FATAL CASES, WITH NECROPSIES.

REPORTS OF FATAL CASES, WITH NECROPSIES.

MALARIAL FEVER, PERNICIOUS.

E. C.; age, 24 years; native of the United States; was admitted to Providence Hospital, Washington, D. C., October 22, 1900; died October 24.

History.—On admission the patient was very ill, with rapid pulse and temperature of 40° C., some dyspnœa, œdema of both feet and of the left arm—none in the right. Physical examination: The skin had a faintly yellowish tinge, the spleen was enlarged, liver doubtful. No eruption present. He had had during the previous ten days several chills and had been exposed, lying out in the wet and cold. Examination of the blood showed malarial organisms.

In spite of large doses of quinine hypodermatically and per rectum, between 4 and 6 grains a day begun after coma set in, there was no improvement, and the patient died after being comatose about sixteen hours.

Necropsy (*about eighteen hours after death*).—The body of a man, about 25 years of age, of medium length. Skin of slightly yellowish tint over the body, greenish in the iliac regions; lividity of dependent portions; cadaveric rigidity well established; pupils normal in size, midway. Section: Very little fat under the skin. Pleuritic adhesions of both pleuræ, especially of the left posteriorly from apex nearly to the base; from 250 to 300 c. c. of yellowish fluid in each pleural cavity. Both lungs œdematous all over, pitting on pressure; hypostatic congestion posteriorly at the base of each, worse on the left side, where a good-sized area was hepatized and sank in water; the apex of the left lung contained scars and two or three hard nodules of a fibrous character.

The pericardium contained about 125 c. c. of fluid; heart appeared pale and flabby, about normal size; chambers empty, with the exception of whitish clots extending into the aorta and pulmonary arteries; induration of aortic and mitral valves. (A systolic murmur was audible in life.)

The liver was congested, dark in color, possibly slightly enlarged; gall bladder partially collapsed, ducts appeared normal. Spleen weighed 718 grams, very large, and was adherent over most of its convex surface to the side of the abdominal wall. The intestines were slightly distended with gas; the appendix and Peyer's patches appeared normal. The kidneys were normal in size, capsule stripping normally, but over the lower end of each was a dark purple area covering the lower end and extending upward toward the hilum, on the left side including the hilum. The suprarenal capsules appeared normal; mesenteric glands slightly enlarged.

G. T. V.

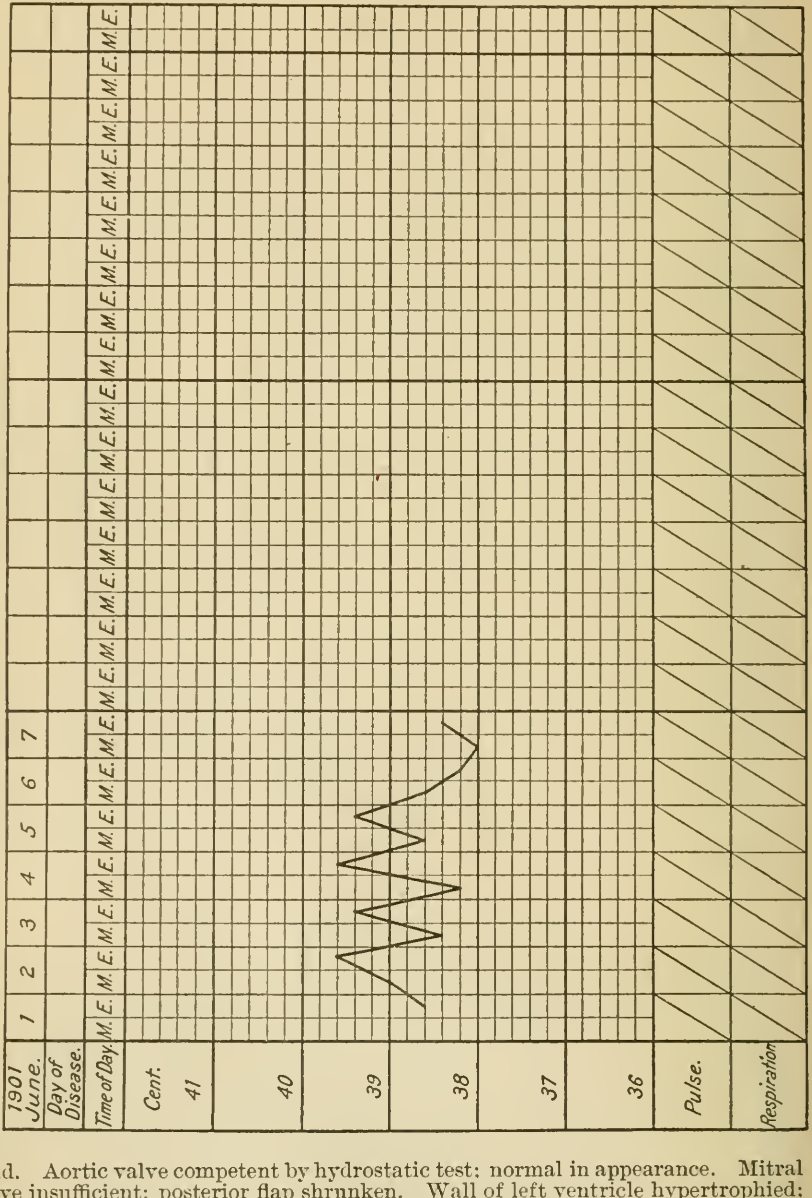
MALARIAL FEVER, REMITTENT—TUBERCLE OF LUNG—MITRAL INSUFFICIENCY WITH REGURGITATION.

A. G.; age, 27 years; nativity, France; admitted to the United States Marine Hospital, port of San Francisco, Cal., June 1; died June 8, 1901.

History.—Patient complained of a severe cold on admission; had lost weight; was very weak; had headache, cough with sputum, chills, but no night sweats. Examination showed emaciation, dullness over upper lobe of right lung, apex, both anterior and posterior, of left lung. There was diminished resonance over both lungs. Breathing roughened, no râles. Excussion of left lung less than right. Heart intermittent mitral, systolic murmur, pulse rapid, temperature 38.6° C. Microscopic examination of sputum failed to show tubercle bacilli. Microscopic examination of blood showed plasmodia malariæ. Patient in a few days became very dyspnœic, but appeared comfortable on June 7, the dyspnœa not being urgent. June 8, 4.30 a. m., death, due to cardiac failure.

Treatment.—On admission patient placed on whisky every three hours and ammonium chloride. After the discovery of the plasmodia Warburg's tincture was given in 5 c. c. doses every two hours, with a dose 10 c. c. to anticipate the evening chill. On June 7 patient was placed on strychnine sulphate, and the ammonium chloride was stopped.

Necropsy (ten hours after death).—Body of a young adult male, fairly well nourished, cadaveric rigidity present, no suggillations; height, 165 cm.; weight, 50.4 kilos. Brain: Weight, 1.320 grams; normal. Serous effusion in subdural space. Heart: Weight, 320 grams; pericardium contains 75 c. c. of a clear serous fluid. Aortic valve competent by hydrostatic test; normal in appearance. Mitral valve insufficient; posterior flap shrunken. Wall of left ventricle hypertrophied; wall of right ventricle normal. Right pleural cavity contains quite an amount of fluid. Right lung: Weight, 500 grams; adherent throughout; heavy bands to pleura. Apex consolidated; section shows miliary tubercles; increase of interstitial tissue; middle lobe shows large cavity, 7 cm. in diameter, lined with a whitish



U. S. Marine Hospital, port of San Francisco, Cal.
Name, A. G.; age, 27 years; disease, malarial fever, remittent, tubercle of lung, mitral insufficiency.

membrane and covered with miliary tubercles. Lower lobe consolidated except in anterior portion. Cavity from middle lobe extends into lower lobe. Patch of cheesy degeneration below cavity. A small patch in anterior portion of lung still crepitates. Left lung: Weight, 420 grams; firm fibrous bands at apex: adhesions throughout pleura. Apex consolidated, containing small cavities. Lower lobe crepitates; appears normal. Liver: Weight, 1,800 grams: normal. Spleen: Weight, 200 grams: congested, having the appearance of increased interstitial substance. Right kidney: Weight, 190 grams; congested: otherwise normal. Left kidney: Weight, 180 grams; congested. Pancreas, normal.

J. N. F.
C. W. V.
J. M. G.

PERNICIOUS MALARIAL FEVER. "COMATOSE FORM."

L. L. D.; admitted to United States Marine Hospital, Stapleton, Staten Island, November 30, 1900: age, 48; nativity, Maine; died December 1, 1900.

Previous history.—Had syphilis fifteen years ago. Was treated in this hospital from April 30, 1900, to June 21, 1900, for phlegmonous erysipelas and abscesses of connective tissues of legs, and discharged recovered.

Present history obtained from friends of patient, who said that since he left hospital he has complained more or less; that his last trip was from Savannah, and that on his return to New York he had chills and fever. Arrived in New York about ten days ago. Day before yesterday he had been drinking heavily, yesterday he spent in bed, and this morning was suddenly taken very sick about 9 a. m.; was brought from the battery office in the ambulance and arrived in hospital about 2.30 p. m. in a semicomatose condition, being roused only with great difficulty and unable to talk.

Physical examination.—Pupils react to light and accommodation, slightly contracted. Right anterior nares covered with dried blood. Breathing labored, unable to expectorate mucus from throat. Pulse regular, of good volume. Skin hot and dry. Percussion: Lungs and heart apparently normal. Liver: Dullness increased upward. Auscultation: Large mucous râles conveyed from throat; inspiratory murmur harsh and strident: expiratory murmur loud and prolonged. Heart sounds obscured by exaggerated respiratory sounds and gurgling râles. Spleen not palpable. Reflexes present, but diminished. Muscles well developed. No paralysis. Passed urine and fæces in bed. Temperature on admittance, 38.8; pulse, 118; respirations, about 40. Blood examined and malarial plasmodia of æstivo-autumnal and tertian varieties found in quantities. In addition to intra-corpuscular plasmodia free pigment and crenated corpuscles present. Urine showed slight amount of albumen.

3.10 p. m.—Rectal injection of bisulphate of quinine, 1.8 grams; spirits frumenti, 30 c. c.; water, 60 c. c. Administered hypodermic injections of bisulphate of quinine, 1.32 grams, in abdominal wall.

3.30 p. m.—Removed, by lumbar puncture, between 30 and 40 c. c. of clear cerebro-spinal fluid. No ill effects noticed during procedure. State of unconsciousness, pulse and breathing not varying perceptibly.

4 p. m.—Bowels moved. Placed in a hot pack, given olei tiglii, gtts. 2 in white of egg. Temperature by rectum, 39.5; pulse, 90: respirations, 40. Repeated hypodermic injection of bisulphate of quinine.

9.40 p. m.—Sweated profusely while in pack; bowels and bladder moved; temperature, 39; pulse, 100; respirations, 30. Coma slowly deepening. Given hypodermic injection of bimuriate of quinine and urea, 0.6. Sponged off with alcohol and water after pack was removed. Repeated hypodermic of quinine bimuriate and urea.

12 p. m.—Pulse weak and irregular: respiration, Cheyne-Stokes character; coma more pronounced. Hypodermic of strychnine given, but condition gradually grew worse, and he died at 6.02 a. m.

Necropsy (eight hours after death).—Body of a male, apparently about 50 years old. Rigor mortis well marked. Suggillations in dependent parts of body. Old bruises on right arm. Right nostril contains a little dried blood. Old scars on right knee and on thigh. On removing calvarium exostosis found at right pterion projecting externally, but not encroaching on brain cavity. Brain membranes are congested, as are sinuses, but otherwise normal. Brain normal except for congestion of small vessels (on gross section). Spinal cord: On entering spinal cavity considerable cerebro-spinal fluid escaped. Spinal cord on gross section seemed apparently normal. At site of puncture no hemorrhage or inflammation found. Anterior mediastinum normal. Thymus not found. Pericardium: Internal surface smooth and glistening, amount of contained fluid about normal. Heart weighs 395 grams. Left ventricle in systole and empty, right ventricle is distended with fluid blood and chicken-fat clot. Great vessels of right side of heart and aorta contain chicken-fat clot. Heart muscles firm, that of left somewhat thickened and that of right somewhat thinner than normal. Aortic orifice not completely closed by valve, which leaks water on testing. Valve leaflets have few and small calcareous deposits. Aorta studded with small calcareous deposits in first 2 inches. Mitral orifice admits three fingers. Valve flaps much thickened. Pulmonary valve and orifice present no abnormality. Edges of tricuspid valve thickened. Left pleura shows considerable adhesions between its layers. Left lung weighs 590 grams, floats, and crepitates. Lower lobe congested and somewhat œdematous, upper apparently normal. Right pleura presents no adhesions. Right lung weighs 620 grams, floats, crepitates, and is otherwise like left. Great vessels of thorax apparently normal. Omentum contains considerable fat, otherwise normal. Spleen weighs 335 grams; enlarged, very soft; slate-colored pulp injected and swells above level of cut capsule to marked extent. Left kidney in normal position, covered with considerable fat, about normal in size; weighs 240 grams. Capsule strips easily. Gross section: Markings plain, cortex yellowish and dull-appearing throughout. Suprarenal body appears normal. Right kidney in normal position, weighs 220 grams. Capsule nonadherent. Gross section: Yellow color more marked than in the left. Bladder contracted, contains about 10 c. c. of thick, yellowish urine. Mucous membrane congested, thick, and presents six ulcers on posterior surface. Ulcers vary from 3.2 to 6.4 mm. in diameter; have a somewhat punched-out appearance extending through mucous membrane. Rectum: Mucous membrane congested. Duodenum normal. Stomach normal. Small intestines normal. Large intestines: Mucous membrane congested throughout. Liver weighs 2,130 grams; soft, friable. Section presents evidences of granulo-fatty changes.

J. M. K.
G. W. L.

ULCER OF EPIGLOTTIS—ŒDEMA OF GLOTTIS—SYPHILIS, SECONDARY.

T. B.; age, 53 years; nativity, Norway; admitted to the United States Marine Hospital, Stapleton, Staten Island, August 3, 1900; died August 3, 1900.

Past history.—Has been coughing for many years, quite susceptible to cold and recovers with difficulty. Had chancre and bubo twelve years ago.

Present history.—Has been exposed to fatigue and hunger for last two weeks. Was taken suddenly with difficulty in breathing, gradually became worse.

Physical examination.—Thorax, auscultation: Tubular breathing over both lungs, upper part, mucous râles over sternum, breath sounds diminished over base of lungs. Inspiratory murmur stridulous and expiratory murmur harsh and prolonged. Heart negative. Throat: Mucous membrane highly inflamed; large ulcer on left palatine fold and smaller ones surrounding it; large ulcer on posterior wall of larynx. Genitals: Old scar on penis, inguinal glands enlarged; skin covered by a rose-red macular eruption varying in size from a split pea to patches the size of a dollar, are elevated, irregularly rounded, and on all portions except feet, hands, and face; color diminished on pressure and quickly regained. They do not itch nor burn, not painful; appeared first on arms and shoulders, then spread over body; eruption appeared on same day as respiratory difficulty. Sputum examination: Negative to tubercle bacilli, thin, mucoid, and horribly fetid; died suddenly 9.25 p. m.

Necropsy (*nineteen hours after death*).—Body white male, well developed; upper parts pale, lower congested; rigor mortis marked. Epiglottis thickened and ulcerated, mucous membrane of larynx œdematous, false cords infiltrated. Skin: The trunk and limbs present an extensive papulo-squamous eruption consisting of slightly elevated areas from 0.50 cm. to 2.50 cm. in diameter when isolated, but coalescing principally on the trunks to form patches, dusky red on dependent portions, they shade to a pale-copperish hue on the upper surfaces. These spots are covered with nonimbricated grayish scales, separated by areas of solid skin. Rigor mortis marked. Subcutaneous fat scant. Muscles well developed. Lungs: Right bound down by old pleuritic adhesions, no fluid in pleural cavity; lung emphysematous and congested; weight, 1,050 grams. Left lung same; weight, 775 grams. Pericardium nonadherent; sac contained 500 c. c. pale fluid. Heart:

Left ventricle in systole, right in diastole, filled with dark clotted fluid; valves normal; weight, 2,150 grams. Abdomen: Diaphragm in normal position. Intestines normal, filled with gas. Liver: Dark colored, congested; firm to touch; resists knife; capsule somewhat adherent; weight, 2,100 grams. Gall bladder collapsed, contains 25 c. c. of fluid only. Spleen: Small and congested, otherwise normal; weight, 150 grams. Stomach: Normal position; contains 1,000 c. c. of partly digested food. Kidneys: Normal position, passive congestion in both; right weighed 220 grams; left, 200 grams. Bladder empty and normal. Penis flaccid, old scar visible. Brain normal.

T. C.
G. W. L.

SYPHILIS.

E. S. W.; age, —; nativity —; admitted to United States Marine Hospital, Baltimore, January 16, 1901, having been transferred from United States Marine Hospital, Philadelphia. As no history accompanied transfer, and the fact also of the patient's inability to talk, his family history, as well as previous clinical history, could not be ascertained.

Condition of patient when admitted to this hospital January, 1901, was as follows: General nourishment good; appetite good; temperature 37.6°; pulse, 76 per minute. There was paralysis of the upper and lower limbs of right side of body, but no involvement of the facial muscles. Patient did not complain of pain. There was no irregularity of pupils. Sphincters were relaxed and consequent, though slight, incontinence of both urine and fæces. There was a marked degree of aphasia, and the higher mental faculties were very limited.

The condition as above described continued without any marked alteration until May 13, 1901, except at times, especially after being moved, fibrillary contraction of the muscles of the right side of body was observable.

In the night of the 13th of May, 1901, patient vomited, and again on the following day he vomited undigested food, and he also had nystagmus in a very marked degree. On the 20th of June, 1901, at 3 o'clock a. m., patient became very restless, throwing his right arm and leg about incessantly; urine and feces were passed involuntarily; respiration became rapid and stertorous; right pupil dilated; pulse rapid and weak. There was an accumulation of mucus in mouth and trachea; at 6 a. m. of same day patient was entirely unconscious; his condition became gradually worse, and at 5 o'clock p. m., June 20, 1901, patient died.

Necropsy (*six hours after death*).—Post-mortem lividity in dependent parts; rigor mortis not marked; pupils irregular; general nourishment good. Circulatory organs: Pericardial sac contained 10 c. c. straw-colored fluid; heart weighed 350 grams; abnormal deposit of fat on the external surface; the walls thickened, giving the appearance of being in a state of fatty infiltration; all valves competent. Lungs: Right weighed 830 grams; left weighed 800 grams. Both lungs showed hypostatic congestion; adhesion of left lung to chest wall posteriorly, near base. Abdomen: Stomach distended with gas; small intestines normal and empty; large intestines normal; the transverse and descending colon contained some hard feces; vermiform appendix normal in size and position. Liver: Weight, 1,375 grams; normal in position and microscopic appearance, although the microscope revealed a slight degree of fatty infiltration. Spleen: Weight, 110 grams; no evidence of any existing morbid condition. Kidneys: Left weighed 210 grams; markedly displaced and freely movable; small cyst in the cortex at lower extremity anteriorly; also one at upper extremity anteriorly; microscopic examination revealed a slight tendency to "cloudy swelling," but no evidence of hydronephrosis, as would be inferred from the presence of the cyst above mentioned, and the fact also of the kidney being movable. Right kidney weighed 175 grams; somewhat contracted, though capsule not adherent; microscope showed nothing of special interest. Calvarium removed: brain weighed 1,242 grams. The entire left cerebral hemisphere was found to be in such an advanced stage of "cerebral softening" that it would be impossible, as well as useless, to enter into a detailed description of the morbid process. The softening was so general, the degree so advanced, as to render all attempt at locating the primary lesion absolutely futile; for, as remarked above, the entire hemisphere was degenerated into a mass without form or structure. Right hemisphere was generally well preserved, presenting very little worthy of special note, except the marked engorgement of the blood vessels. Cerebellum: Right lobe showed beginning degeneration at the base.

R. L. McN.
H. R. C.

SYPHILIS, SECONDARY.

Stricture of œsophagus.

R. P.: age, 55 years; nativity, England; was admitted to the United States Marine Hospital, port of San Francisco, Cal., February 4, and died May 23, 1901.

History.—Three months prior to admittance difficulty in swallowing became evident. There was no pain, but patient continued to get worse, until at time of admission almost everything he endeavored to swallow was regurgitated. On passing the œsophageal sound two strictures were found, one 21 cm. and the other 41 cm. from the upper teeth. The passage of the sound was always followed by some bleeding. While in the hospital patient lost considerable weight; was very weak; had small and rapid pulse, and a marked and increasing cachexia. Cough was distressing. Shortly before death occurred patient was markedly dyspnœic. Stimulation was used, but patient did not rally. Loud, bubbling râles could now be heard over entire chest. Death occurred at 8.15 p. m., from exhaustion following inanition due to stricture of œsophagus. Treatment was principally large doses of iodide of potash with stimulants and abundant food.

Necropsy (seventeen hours after death).—The body is that of an elderly white male, poorly developed and much emaciated. Post-mortem rigidity well marked. Suggillations are fairly well marked. Encephalon normal. Brain weighs 1,450 grams and is slightly congested. Lungs: Both adherent to diaphragm; covered by a deposit of lymph; œdematous; float in water and crepitant throughout. Left lung also somewhat adherent at apex; weight, left 530 grams, right 820 grams. On section a purulent fluid oozes from the smaller bronchi and bronchioles. Pericardium contains about 25 c. c. of yellowish fluid. Heart: Weight 270 grams; small, pale, and flabby. Coronary arteries are hard and tortuous. Mitral and tricuspid valves shrunken and insufficient. Aortic and pulmonary valves are normal. Large vessels have some fibroid changes near their beginning; the walls of the aorta are calcareous near the heart, and the descending aorta, at about the level of the fifth to seventh dorsal vertebra, is indented by pressure of an abnormal growth in œsophagus. Œsophagus: At about the level of the fourth dorsal vertebra and extending to about the first lumbar vertebra there is a large mass infiltrating the walls of the œsophagus. It surrounds the bifurcation of the trachea and presses on the bronchi as well as on the descending aorta posteriorly. Below, the mass is adherent to the stomach. On section, the mass presented the appearance of being in a state of cheesy degeneration. Spleen, normal; weight 130 grams. Liver: Weight 1,500 grams; edges rounded; color normal. On section, the cut surface presents the typical appearance of the "nutmeg" liver, namely, a secondary fatty degeneration around the congested veins, evidencing a secondary cirrhosis of the liver. Kidneys: Right kidney weighs 310 grams; capsule strips readily; somewhat irregular; markings indefinite; presents signs of cyanotic induration. Left kidney presented no marked differences from the right kidney. Other organs normal.

L. S. S.
C. W. V.
J. M. G.

Pyelitis—Myelitis, chronic inflammation of bladder (chronic suppuration)—Abscess of kidney (pyonephrosis).

S. A. S.: age, 55 years; nativity, Pennsylvania; admitted to the United States Marine Hospital, San Francisco, Cal., February 1; died February 18, 1901.

History—Family history negative. Had malaria four years previously. Had a chancre twelve years ago, followed by secondaries. Present illness began two years previous to admission, with incontinence of urine. He passed a great deal of urine, containing a large amount of mucus and pus and had used a catheter for two years. Occasionally he passed blood. Had chills at intervals of two or three days for the past year. For a week previous to entering hospital had incoherent spells, during which he had no knowledge of what he was doing. Thirst excessive. Bowels very loose and incontinent. Had occasional severe headaches. Upon examination his lungs and heart were found normal, excepting rapid action of heart. Mental condition rather unstable and confused. Memory very poor. He had a somewhat spastic gait. Patellar reflexes were greatly exaggerated; muscular sense normal; tactile, temperature, and pain sense subnormal along distribution of left internal saphenous nerve. Urine showed pus in large quantities, but no casts. Temperature was subnormal from time he entered hospital till death;

Regardless of treatment patient showed no improvement, but rather the opposite, all of the symptoms becoming intensified. Complained at times of severe pain in lumbar region. His condition seemed to be approaching general paralysis of the insane.

On February 17 his pulse became weaker, and at 1 a. m. of February 18 was pulseless but conscious. Strychnine hypodermatically failed to revive him, and he continued to sink until death at 6 a. m.

Treatment consisted of iodide of potassium in rapidly increasing doses and symptomatic treatment directed toward rendering urine antiseptic, regulating bowels, and sustaining strength with easily digestible food.

Necropsy (*eight hours after death*).—Body that of an adult white male; height, 1.7 meters; weight, 75 kilos; well developed; well nourished. A number of old cicatrices on arms and legs. Brain: Normal, with exception of increased amount of fibrous tissue. Heart: Examination *in situ;* muscle pale and fatty in appearance. Lungs: Examined *in situ*, apparently normal. Kidneys: Both organs found almost destroyed, with numerous abscesses scattered throughout their substance. The pelves were both filled with pus. Also a condition of interstitial nephritis. Bladder contained abscesses in its walls. Mucous membrane in a condition of chronic suppurative inflammation, and in places areas of necrosis.

NOTE.—In deference to wish of relative of deceased, further examination was not made.—C. W. V.

Microscopic report.—Kidneys: The convoluted and collecting tubules are in places entirely obliterated by connective tissue growth. In other areas the convoluted tubules are somewhat dilated; their cells are swollen and pale, and their nuclei stain but faintly. These latter contain pus cells in great numbers. Between these dilated tubules is very dense fibrous connective tissue. Scattered throughout the section are small abscesses filled with broken-down cells, pus, and nuclear débris. The glomeruli are in places much smaller than normal and surrounded by a dense layer of connective tissue, and the cells of the capillaries are overgrown, crowded, and atrophied. Others of the glomeruli are quite large, and the connective tissue growth seems to have extended between the capillaries, almost replacing them. The walls of the blood vessels are thickened, the swollen cells of the intima almost closing some of the smaller ones. Diagnosis: Chronic pyelonephritis, with chronic interstitial nephritis. Spleen: Capsule is quite dense and compressed. The trabeculæ are large and prominent, appearing so in patches. The malpighian bodies are small and in places show hyaline degeneration. The adventitia of the malpighian arteries is greatly thickened. The pulp appears very hyperemic; there is a hyperplasia of pulp cells. It consists of atrophied and broken-down splenic cells, connective tissue, lymphocytes, leucocytes and multinuclear cells.

C. W. V.
A. M. M.

NEW GROWTH, MALIGNANT—SARCOMA OF NECK AND THORAX.

H. M. Admitted to United States Marine Hospital, Stapleton, Staten Island, September 14, 1900; age 50 (or more); nativity, Germany; died November 10, 1900.

History.—The patient was returned to New York from Constantinople by the United States consul at that port.

He presented himself at the hospital with a large tumor on the right side of the neck, in the posterior triangle, encroaching on the anterior triangle. His condition was cachectic, and the symptoms indicated a malignant growth. He first noticed the growth in May of this year. It was then small and painful, and it started rather high in the neck, but descended as it grew. At the time of admission the voice was affected, and he had a difficult cough, with mucous expectoration, sometimes blood streaked. He had been in a hospital in Constantinople, and had asked for an operation there, but the surgeon declined to do it and advised him to go to England for it, he choosing New York instead. The prognosis of the case was unfavorable, but the patient wanted the tumor removed, and there was a prospect that he might be made more comfortable thereby, and it was done. It proved to be an alveolar sarcoma, developed in the deep lymphatics of the neck. Cystic degeneration had begun in it, but the greater part of the tumor was solid. The platysma myoides muscle and the superficial cervical nerves were involved in it, otherwise it had not invaded neighboring parts. The lymphatic vessel descending from the glands and the tumor was affected, however, and changed to a thick solid cord, and it became evident at the operation that the sarcoma descended deep into the chest along the lymphatics. The operation wound healed finely, but the cachexia and the signs of an affection of the chest and of pressure on the bronchi increased, and latterly signs of pressure on the gullet appeared. There were loud mucous râles in the lungs, but no physical signs in the chest of a tumor of any size.

Necropsy (twenty-two hours after death).—Rigor mortis. Post-mortem lividity in dependent parts. Marked emaciation, but not the most extreme. Operation scar on right side of neck following line of sterno-mastoid muscle and extending across clavicle. Nodules in skin in center of scar and at lower extremity. Serous liquid mixed with bright-colored blood escaped from the meninges of the brain when the skullcap was removed. The blood vessels showed very clearly, the arterial radicals being bright red and the veins dark. There were bright-red patches in the pia mater, caused by fullness of the terminal arteries and capillaries, the most conspicuous one being in the right parietal region. Pus escaped from the chest when the fourth costal cartilage on the right side was cut. A small abscess was found in the anterior mediastinum on this side, central in the sixth interspace at the junction of cartilages and ribs. A chain of enlarged lymph glands was found in the chest reaching down from the right side of the neck. A number of small, pale, gristly nodules were found scattered beneath the skin in the region of the neck where the tumor had been removed by operation. There was a whitish, fibrous, and fatty patch in the pericardium on the front of the heart. The cavities of the heart were filled with dark clotted blood and with smaller buff clots. The auriculo-ventricular orifices admitted two fingers. The aortic and pulmonary valves held water. The aorta seemed dilated in the arch and measured 10 cm. in circumference, but was not atheromatous. The pulmonary artery was also large. The heart weighed 300 grams. Numerous enlarged, dark-colored lymph glands were clustered around the bifurcation of the trachea and the roots of the lungs. Purulent and bloody liquid filled the trachea and bronchi, but no erosion of the tubes could be found. The left lung was adherent in the lower part of the pleural cavity, and there were recent fibrinous deposits on the pleura. There was an abscess about 3 cm. in diameter in the lower border of the lower lobe. The whole lobe was in a state of red hepatization. The upper lobe crepitated slightly, pitted on pressure externally, and exuded frothy serum from the cut surface. The lung weighed 1,300 grams. The right lung was adherent about the upper lobe. The whole lung showed the impress of the ribs. The abscess noted above as found in the mediastinum had eaten deeply into the lower border of the lung, and several smaller abscesses were found in the neighboring lung tissue. The lower part of the lower lobe was solidified and friable, the upper part crepitated. The middle lobe was in gray hepatization. The upper lobe was full of blood but crepitated. The lung weighed 1,100 grams. The œsophagus was not actually obstructed, though pressed upon by enlarged lymph glands. Fat was scanty in the omentum. The spleen weighed 150 grams. The suprarenal bodies were very soft and were ruptured in removing. The left kidney weighed 150 grams. The capsule stripped moderately easily. The cortex was very narrow, the tissue pale. The pelvis of the right kidney was somewhat distended with urine, which had evidently backed up from the distended bladder, since the ureter was not obstructed. The kidney weighed 170 grams. The tissue was deep red and the cortex was thicker than in the left kidney. The bladder was greatly distended with urine. The gall duct contained bile; no gallstones. The bile ducts were patent. The liver weighed 1,700 grams and had no unusual appearances either externally or internally. The pancreas weighed 70 grams. The stomach contained a little liquid but was shrunken, and likewise the intestines. The appendix was slender and curled under the cæcum.

A. C. S.
G. W. S.

ADENO-CYSTO-SARCOMA OF JAW.

E. K.; age, 40; born in Connecticut; admitted to the United States Marine Hospital, Boston, Mass., December 26, 1899; died August 18, 1900.

History.—When admitted to this hospital an examination was made which revealed a tumor about the size of a hen's egg situated midway between the symphysis menti and angle of lower jaw and just below it on the right side. A diagnosis of inflammation of the lymphatic glands was made, and patient was put on potassium iodide. On January 1, 1900, an incision was made for the purpose of removing this tumor, but it was found so closely connected with the main blood vessels and nerve trunks that an operation was deemed impossible. On April 5, 1900, patient deserted. He was again admitted to this hospital on July 12, 1900. On examination it was found that this tumor had increased in size and was very painful. There was also some cachexia. It was then that the diagnosis of adeno-cysto-sarcoma was made.

Necropsy (*held August 18, 1900, at 2 p. m.*).—External appearance: Patient very much emaciated and cachectic. Post-mortem rigidity marked. Pupils equally dilated. On the right side of face, extending from the angle of the lower jaw to the symphysis menti and from above on a line drawn from the ala of the nose to the external auditory canal and below as far as the clavicle, was a large, hard, indurated mass, the central part of which was broken down and ulcerated. Internally this tumor extended toward the trachea and constricted it. On section of this tumor two small cysts were opened which contained a clear white fluid. The substance of the tumor was hard and cartilaginous in character and not very vascular. It was firmly attached along the inferior maxilla of that side. Circulatory organs: The heart weighed 350 grams and was in systole. The valves were normal; the pericardial sac was normal, and contained 30 c. c. of a pale straw-colored fluid. The great vessels were normal. Respiratory tract: The nose and larynx were normal. The trachea was very much diminished in its caliber, due to the pressure of the tumor upon it. The pleural cavity was normal. The right lung was normal and weighed 750 grams. The left lung was normal and weighed 650 grams. The gastro-intestinal tract: The stomach, small and large intestines were normal. The mesenteric glands were very much enlarged. The liver was normal and weighed 1,770 grams. The gall bladder was distended with bile. The spleen was normal and weighed 200 grams. The left kidney was normal and weighed 210 grams. The right kidney was normal and weighed 220 grams. The bladder was normal and full of urine. The pancreas was normal. The brain was normal and weighed 1.700 grams..

F. I.

CARCINOMA OF INTESTINES AND LIVER.

F. M.; age, 54 years; nativity, Ireland; admitted to the U. S. Marine Hospital, Cleveland, Ohio, July 26, 1900; died October 17, 1900. Patient was transferred from the U. S. Marine Hospital at Buffalo, N. Y., to this hospital.

History.—Patient's mother died of heart disease; patient had gonorrhea twice; rheumatism; at times had used a great deal of alcohol. In April, 1900, he began to have pain in the abdomen, which at times became swollen. He became weak and was soon unable to work. Since spring he has lost about 40 pounds in weight. About July 1 he noticed that his right foot was much weaker than the left and in walking it dragged somewhat.

General appearance.—Patient is of large frame; body is very much emaciated; supra and infra clavicular spaces are very deep, clavicles prominent. The ribs and costal cartilages are quite prominent. On percussion no liver dullness can be detected in the mammillary line. In midaxillary line dullness extends from the eighth interspace to the ninth. Respiratory system is normal. Heart sounds are normal; pulse is regular and strong. The veins in the abdomen are markedly dilated. There is a marked impulse in the epigastric region. Patient has a very poor appetite and occasionally has attacks of vomiting and severe pain in the abdomen after eating. Bowels are constipated. A hard, irregular mass can be felt in the upper part of the abdomen in the middle line, just below the ensiform cartilage. This mass is about 2 inches in diameter, is slightly movable, and on pressure considerable pain is felt.

August 22, 1900.—The stomach and abdomen are very much distended. Bowels are constipated. High injections cause only slight movement of bowels.

October 11.—Patient has severe pain in abdomen. Pulse is slightly irregular, rapid, and weak. Is unable to take any nourishment and very weak.

October 17.—Death at 12.10 p. m.

Necropsy (*twenty hours after death*).—Body of an adult, large build. Rigor mortis is still present; skin jaundiced. Subcutaneous fat very small in amount. Muscles deep red color, flabby, and small. There is hypostasis present over dependent parts. Position of thoracic organs normal. Parietal pleura adherent over anterior and lateral part of right lung. Fluid in pericardial sac increased in amount. Small amount of subpericardial fat. There was an opacity and thickening over anterior surface of right ventricle about the size of a half dollar. Heart normal in size. Valves were normal. Lungs distended and crepitant throughout. Abdominal cavity was filled with large amount of pale yellow fluid; coils of intestine adherent. Omentum was small, absence of fat, contained many small hard black nodules. Spleen slightly smaller than normal. Fatty capsule of right kidney increased and easily stripped off; kidney slightly smaller than normal and on section was found to be normal. Left kidney of normal size, capsule easily stripped off. On section kidney shows congestion. Bladder is contracted, contains small amount of amber-colored urine. Stomach is large, partially filled with fluid. Pyloric orifice partly closed by a hard growth. Duodenum bound down to abdominal wall by a hard growth which extended around the duodenum and almost obliterated its lumen. Small intestines contained hard fecal masses. At places the intestine is constricted by growth and lumen almost occluded. On the right side the appendix and cæcum are firmly bound down to the iliac fossa. The large intestine contains hard fecal masses. Over the surface of the liver are yellowish-white areas varying in size from a kernal of wheat to a silver quarter. These areas are hard and resistant on section and are found throughout the entire liver. Gall bladder is distended and filled with golden-brown fluid. The pancreas is granular on section and firmly united to the growth in the duodenum. Mesentery is contracted along its entire attachment to the intestine and contains an infiltrating mass, hard and nodular. In places it is diffuse, and in other areas it forms an irregular hard cord about half an inch in diameter. The microscopical examination of the tumor showed a scirrhus carcinoma made up of a mass of dense fibrous tissue containing spaces in which were cancer cells. The liver showed atrophy of the cells and an increase of Glisson's capsule. The liver cells contained a brownish-yellow pigment from broken-down blood. Throughout the liver there were carcinomatous areas. The microscopical examination of the pancreas showed no pathological changes.

W. J. P.
A. D. F.
J. S. M.

COLUMNAR CARCINOMA OF STOMACH—SECONDARY INVASION OF LIVER AND OMENTAL GLANDS.

Clinical history.—W. Y., age, 55; white; born in Texas; was admitted April 26, 1901, to the United States marine ward in St. Mary's Infirmary, port of Galveston, with the following history: He states that he has been fairly healthy till one month ago, when he fell and hurt his face. This got well, and nothing further troubled him except an attack of piles, which bled for one day and then disappeared. For three weeks, while he has had no pain, he has noticed that his abdomen has been gradually getting larger, and there has been a swelling and a solid feeling about the upper part of his belly for some time. He is habitually constipated, and for two weeks his ankles have been swollen, otherwise he has noted nothing abnormal. He has had no epigastric pain, nausea, or vomiting. On examination patient is emaciated, and his ankles are slightly œdematous. His chest shows nothing abnormal. His abdominal wall is prominent, the skin is glazed, stretched, and shining; the umbilicus is protruding. Especially in the epigastric region over the hepatic area is there a rounded tumor visible, which is dull on percussion and fluctuates. A dull note in the hypogastrium (patient sitting up) points to fluid in the abdomen. His urine contains neither albumen nor casts, but is scanty. A needle introduced into the prominent epigastric swelling withdrew a little dark straw-colored fluid, and the liver could be felt as a hard, very resistant body extending down almost to the umbilicus.

On April 29, under ether anaesthesia, an incision in the middle line above the umbilicus allowed a large amount of ascitic fluid to escape, after which there was revealed a much enlarged liver, finely granular on the surface, suggesting a "hobnailed liver," with several large nodules apparently cancerous; the stomach had a large mass along its greater curvature, and many cancer nodules were found in the greater omentum. The incision was closed. He died next day (April 30) at 7 a. m.

Necropsy (seven hours after death).—(Copy of report by Dr. Allen J. Smith, professor of pathology, University of Texas.) The body at necropsy was that of an emaciated white man, apparently 60 years of age, 5 feet 2 inches in height, poorly nourished, and weighing probably 135 pounds. No abnormalities of structure or deformities evident. No scars or marks upon the surface except a recent surgical incision above the umbilicus in the median line, done in exploratory operation. Slight icterus, best seen over the abdominal wall; hair of head thin, gray; beard full, gray. Muscles in abdominal incision normal in appearance, but thin; post-mortem rigidity slightly present, probably having disappeared. Panniculus adiposus very slight; a little œdema about right ankle. Body heat disappeared, no signs of decomposition. Head, etc., not examined. Thorax: Thoracic organs in normal position. No abnormality in diaphragm or mediastinum. Pleuræ: The right pleural cavity contained 192 c. c. of clear straw-colored fluid; there are a few old, firm, adhesive bands in the axillary line at the level of the second and third rib; otherwise there are no thickenings or roughenings of this membrane. The left pleural cavity contains 128 c. c. of a similar fluid, and there are adhesions in a small area in the pericardial region near the anterior border of the lung. Pericardium: The cavity contains 16 c. c. of fluid similar to that in the pleural sacs; membrane normal. Heart: Small, weight 220 grams; circumference at base 19 cm.; length of left ventricle, outside, 9 cm., inside, 6 cm. There is but little epicardial fat, membrane smooth; coronary arteries prominent and resistant from fibrosis, but not calcified. Muscle substance normal color; wall of right ventricle measures at thickest part 1.2 cm.; of right ventricle 0.5 cm. Endocardium normal. Valves competent; aortic cusps slightly thickened at base where attached to fibrous ring, and the left one has a very prominent corpus arantii with a thick ridge running from it along the line of closure, otherwise cusps normal. Opening admits index finger to first joint. Mitral leaflets normal except for slight thickening of anterior one near base, with one or two minute points of calcification; opening admits index and first finger to first joint. Valve leaflets of right heart normal. Tricuspid admits two fingers and thumb to first joint, pulmonary one finger to first joint. Right heart contains firm dark clots of blood; left heart empty; consistence of wall normal. Lungs: Similar; right weighs 380 grams, left 370 grams. Organs collapsed from air pressure on opening chest; moderately pigmented, crepitant throughout, moderate hypostatic congestion in posterior and lower portion of lower lobe in each; section dry, but on pressure exudes small amount of frothy and slightly bloody fluid; no areas of solidification; no tubercular deposits; bronchial glands not enlarged; mucous membrane of bronchi normal. Aorta: Slight atheroma just above the heart and numerous small areas in descending aorta along the line of and about openings of intercostal branches. Abdomen: On opening peritoneal cavity 2,500 c. c. of fluid, slightly turbid, reddish yellow (blood and bile tinged) are removed. Organs normally disposed. Liver enlarged downward and to left, extending nearly to level of umbilicus and two fingers' breadth to left of median line on that level. No peritoneal roughenings or adhesions, save over enlarged left lobe of liver, where the peritoneal coat has lost its glossiness and is deeply blood tinged, and the seat of subperitoneal hemorrhagic points not noted at operation on April 29, 1901 (probably followed handling of liver at operation). No peritoneal cancerous deposits. Spleen: Weighs 170 grams, measures 12 cm. in length, 9 cm. broad, 4 cm. thick. Capsule smooth and normal in thickness, color normal; on section pulp presents a slightly darker color than normal; is slightly softer than normal, otherwise shows no gross abnormality. Section exudes blood rather freely. Adrenals: Apparently normal.

Left kidney weighs 155 grams; measures 11 cm. long, 5.5 cm. broad, 3.75 cm. thick; no external abnormality; perirenal fat not marked. Capsule strips off without tearing substance and without special resistance, leaving a slightly granular surface, showing one or two small subcapsular cysts. Substance of kidney normal color, slightly firmer than normal. On section cortex appears of normal thickness, pyramids not distorted, medulla distinct from cortex and of somewhat deeper color. Vasa recta of pyramids and tufts of cortex clearly visible from fullness. Venæ stellatæ not visible. Pelvis normal. Right kidney weighs 150 grams; measures 11 cm. long, 5.5 cm. broad, 3.75 cm. thick. Identical in appearance with its fellow; presents one subcapsular cyst size of buckshot on posterior (dorsal) surface. Ureters: Normal to gross examination. Bladder: Mucosa normal, but middle and right prostatic lobes are somewhat enlarged and the muscularis presents hypotrophic ridges. Testes normal in appearance, perhaps a little yellow and soft as compared with younger organs. Duodenum shows no external abnormalities; presents a few submucous points of hemorrhage; otherwise normal. Biliary papilla normal.

Gall ducts: No bile can be forced out by pressure on gall bladder owing to the involvement of wall of common duct in a mass of glands the seat of enlargement from invasion of cancer; the duct wall itself seems healthy, but pressure by masses adherent about it occludes it. Stomach weighs 275 grams when opened and cleared of contents. The organ is somewhat contracted and is slightly adherent to the under surface of the liver and gastro-hepatic omentum, otherwise the peritoneal covering is smooth and glossy, but over a large area the wall looks and feels firm and dark from injection. On opening the viscus the greater part of the large curvature from close to the fungus to within an inch and a half of the pyloric ring and extending irregularly toward the lesser curvature is occupied by a deep-red fungoid thickening of cancerous character. This fungous, hemorrhagic, and irregular mass causes a thickening of the wall ranging from 1 to 25 cm., and spreads out over an irregular oval area 4.5 cm. long by about 12 cm. broad. Its borders in some portions are sharply defined; in others, fade gradually in color and thickness into the normal mucous surface. Cardiac and pyloric openings normal.

Secondary extension of cancer: The principal seat of secondary formation is the liver, but in addition there are enlarged glands and nodules along the vessels extending in lymphatics to the left and dorsally along the course of the gastro-epiploic and splenic arteries, forming a chain of secondary deposits under the spleen and a small mass in the neighborhood of the cœlaic axis. Another follows the course of the right gastro-epiploic artery and gastro-duodenal artery, a considerable mass of glands and nodules welded together by adhesions being in the neighborhood of the common biliary duct (not envolving the wall of the duodenum, however); and in this mass the head of the pancreas is united with one nodule about 2 cm. in diameter and several smaller ones involving it. All along the body of the pancreas are nodules in the course of the splenic artery. There is one gland of the external iliac group of the right side (lying just under the peritoneum below Poupart's ligament), which is enlarged, and a section has the appearance of cancerous involvement. The thoracic duct in its course does not show involvement, the diaphragm and lungs are free and no other distant focus save the iliac gland just mentioned presents invasion. The secondary formations are pale, slightly yellowish in color, soft, and in many instances when cut appear to be fattily degenerated in the interior, sometimes pultaceous, always freely packed with cancer juice. Small intestine normal throughout. Appendix normal, 5 cm. long, 0.4 cm. thick, lies back of the cæcum, its free and coiling end toward the median line and curving over the edge of the pelvis. Large intestine normal. Intestinal contents washed through a strainer of cheese cloth failed to show any parasite or any gross abnormality. Liver: The liver, gall bladder, and surrounding cancerous glands, together with the adherent pancreas (not separated because specimen reserved for museum), weigh together 3,040 grams. The liver measures transversely, 26 cm.; anteriorly or posteriorly, 20 cm.; perpendicularly, 12 cm. The surface of the left lobe is deeply congested, the seat of numerous subcapsular hemorrhages. This surface has lost its glossiness, as, too, the under surface of the enlarged left lobe, and the whole surface is beset with minute nodules as from cirrhosis; here and there all over the surface and throughout the substance, as shown on section, are yellowish-white nodules, the longest reaching 2 cm. or more in diameter, encapsulated and rounded, of secondary cancer. Numerous whitish points in the section suggest miliary invasion, and whitish streaks show in the cut surface which are probably strands of sclerosed perilobular tissue, or perhaps lines of lymphatic extension of cancer. The uninvolved portions of the liver are slightly stained with biliary pigment and nutmeg in appearance from fatty infiltration.

Gall bladder filled with liquid bile, and contains half a dozen small, irregular calculi; wall normal. Pancreas measures 14 cm. in length; is the seat of a node of secondary cancer, about the size of an average pecan nut (oval shaped) in the head, and along the superior border in the vicinity of the splenic artery are a dozen or more enlarged, hard lymph glands. The substance of the gland presents no gross alterations other than the above. Mesentery apparently normal, but mesenteric gland can be felt distinctly as minute (enlarged) bodies (size about 0.5 cm. by 0.3 cm. by 0.2 cm.), firmer than normal.

BITS PRESERVED FOR MICROSCOPIC EXAMINATION.

1. Wall of left ventricle of heart in state of atrophy, the interstitial connective tissue decidedly increased; muscle fibers much pigmented; moderate fragmentation of fibers; many fibers athropic; Meigs's intermuscular capillaries well marked. Blood-vessel walls thickened, moderate infiltration of epicardium.

2. Papillary muscle or left ventricle similar to above.

3. Wall of right ventricle similar to wall of left ventricle, intermuscular connective tissue, as usual, more marked than in left ventricular wall.

4–5. Bits of superior lobes of right and left lungs. Both lungs show in the arterioles and in the capillaries in the walls of the air spaces numerous plugs of secondary cancer of same type as seen in liver. No clear lymphatic involvement. In a few spots bordering on these minute foci of cancer the air spaces are occupied by pneumonic exudate. Moderate pigmentation; otherwise normal. Section of spleen, marked congestion. Trabeculæ and vessel walls thickened. Moderate pigmentation.

7. Section of kidneys: Slight thickening of vascular walls, irregular congestion of individual vessels, especially vasarecta. Slight intertubular connective tissue hyperplasia. Scattered, cloudy swelling in cells of cortical tubules. Ureters normal.

8. Section of enlarged right lobe of prostate. gland tubules considerably increased and in a number of places take on a typical cancerous appearance, the epithelium breaking away from the membrani propia and infiltrating the surrounding tissue. In a number of places the gland tubules are widened out into acinous arrangements and filled with large polyhedral, moderately yellowish pigmented cells. Otherwise normal.

9. Mesenteric gland normal.

10. Iliac lymphatic gland: Seat of numerous secondary cancerous deposits apparently identical to the process in the prostate body. Little lymphadenoid structure persisting. the body of the gland being made up almost solely of fibrous tissue.

11. Stomach: Section shows diffuse involvement of entire thickness of wall, with cancer infiltrating even the outer fibrous layer, but at no point showing perforation of latter. The original structure of the wall is completely lost: much thickened. The cancer has the appearance of a soft carcinoma rather than of a cylindrical epithelioma, with some degenerative changes noted near the surface of the specimen. not as marked. however, as in the secondary foci in the liver.

12. Liver: Capsule thickened. fibroid, and seat of marked round cell infiltration and congestion. Section selected shows little liver structure, arranged in cords from periphery of lobules toward central vein. These cells are for the most part deeply pigmented with biliary granules and in many cases stain poorly. The lobular line is lost and Glisson's capsules indistinguishable from the very great fibrous stroma extending all through the section as the cancerous framework. In the spaces of this framework are the cancerous masses, the cells apparently identical to those in the gastric cancer. Large areas look cheesy and granular, refuse to take the nuclear stain, and stain with little differentiation with eosine or picric acid. In these masses are clearly to be seen, however, cellular bodies of variable size—probably cancer protozoa—about which is usually a border of epithelium of the cancer. There is no definite localization of this cancer with capsule about it, but in irregular streaks it extends throughout the organ. Here and there are definite encapsulated spherical nodes of the same structure, but these are not very numerous.

13. Nodes in pancreas of the same type as the liver areas described: pancreatic tissue otherwise normal.

14. A lymph gland from the mass about the common gall duct is in a diffusely fibroid condition, with numerous areas of cancerous deposit of the same type as just described.

15. A hæmo-lymph gland taken from close to the renal vessels shows distinct thickenings of its vessel walls, is of the spleno-lymph variety, and contains a number of fibro-cellular bodies of spherical shape and unknown significance: otherwise normal.

The left adrenal was also examined microscopically, but shows no abnormality.

W. K.

ERYSIPELAS.

J. S.; age, 37 years; nativity, England; admitted to the United States Marine Hospital, port of Mobile, Ala., March 6, 1901, and died March 10, 1901, at 1.30 a. m.

History.—Patient is an English seaman and was admitted to hospital at request of the British vice-consul on the morning of March 6, 1901. When first seen the patient was pacing the room and indulging in constant groans expressive of the intense agony and pain which he was suffering. No history beyond the fact that he fell while intoxicated from his bunk on ship and received an injury to head and other parts of body. An examination revealed the presence of a scalp wound about 3 cm. in length and extending through all the tissues of the scalp, exposing the bone. Wound situated on the right side and upper surface of the occipital bone. The scalp, face, and neck seat of an intense erysipelatous inflammation and the accompanying swelling distorted the features and closed the right eye. Temperature, 39.4° C.; pulse, 120; tongue coated; pain excruciating until relieved by a hypodermic of morphine. The following day the patient appeared somewhat better: temperature, 38.2° C. The inflammation continued to spread, extending over both sides of the face, neck, and as low as the junction of the gladiolus with the manubrium. On the 8th the patient became delirious and had to be restrained to keep him in bed. He gradually grew worse and died at 1.30 a. m. March 10. The treatment consisted of the administration of large doses of tr. ferri chlor and the constant applications of ichthyol to the inflamed parts, with H_2O_2 and $HgCl_2$ irrigations of wound; anodynes to mitigate his sufferings, and chloral, bromides and hyoscine hydrobromate to control the delirium.

Necropsy (nine hours after death).—Body that of a well-developed muscular white male. Head, face, and neck extremely swollen, with blebs in places, eyelids œdematous, eyes colored as a result of the erysipelatous inflammation, distorting features almost beyond recognition. Depression in forehead over frontal bone about 5 cm. in length, 2 cm. in depth, 1 cm. in breadth, resulting from an old fracture of the skull. A recent injury over right eye caused by fall. A lacerated wound of scalp, 2½ cm. in length, caused by fall or blow, located over area of occipital bone, about 3 cm. to right of median line between the superior and inferior curved lines. Bone exposed, but not fractured; pus exuded from wound. The scalp is boggy and œdematous, discharging from several places a sero-purulent matter. Right knee has recent wound from fall, about 1 cm. in diameter. A cicatrix over left thigh. Posterior aspect of body discolored black from ecchymosis. Rigor mortis marked. From incised tissue of neck and tissue over the manubrium a bloody sero-purulent discharge flowed freely upon compression. Tissues soft and infiltrated. Thorax: Pericardium thickened and inflamed, and contains about 200 c.c. of serous fluid. Heart small and covered with fat, large ante-mortem clot filling right side of heart and extending 2 cm. into pulmonary artery. Aorta slightly thickened. Hydraulic test demonstrates competency of aortic and pulmonary valves; mitral and tricuspid valves apparently normal; weight of heart, 300 grams. Right lung weighs 800 grams, left 500 grams; right œdemateous; a frothy material exudes from incised surface; glottis œdematous. The erysipelatous inflammation had extended into the larynx and trachea, where mucous membrane presented the characteristic appearance of an intense inflammation. The surrounding tissues were invaded by the extension and present similar gross lesions to those already described. Abdomen: Liver weighs 1,900 grams; upon section bleeds easily; substance, friable; color, normal; gall bladder distended with bile; ducts patent. Right kidney congested and weighs 150 grams. Left kidney congested and weighs 175 grams. Spleen, normal; weight, 125 grams. Urinary bladder contains about 300 c. c. of urine. Intestines distended with gas. Calvarium removed with difficulty, owing to the great thickening of the bones, which exceeded that of the African skull. Skull cap somewhat oblong in shape and flattened on top. The vessels of arachnoid and pia mater were engorged and red. The two membranes were closely adherent in places. The membranes were evidently in the first stages of an inflammation. Weight of brain, 1,250 grams.

J. T. B.
W. P. M.

MULTIPLE FRACTURE OF THE SKULL AT ITS BASE.

W. L.; seaman; age, 22 years; native of Canada; was admitted into the marine division of the Buffalo Hospital of the Sisters of Charity on May 10, 1901.

History.—Patient could give no account of the injury which he had sustained, save that he had fallen and struck upon his head. It was afterwards learned that he had fallen into the hold of the steamer *John W. Moore* and when picked up was unconscious.

Present status.—He is semiconscious; the pupils equal and react to light; pulse 80 and of good quality; no loss of sensation or motion. There is bleeding from left ear, a large contusion of left occiput, and a bruised area along the lower dorsal region. This condition was quickly followed by loss of consciousness, dilatation of pupils, paralysis of the muscles of deglutition, stertorous breathing, some convulsive tremor of both hands, and death three hours after the injury. There was at no time the possibility of rendering surgical assistance.

Necropsy.—Body of young adult male in full health; rigor mortis commencing. There is a contusion of the scalp covering the left side of the occipital bone over the superior curved line; there is a flow of bloody serum from the left ear, and over the lower dorsal region there is an oval tumefaction 16 cm. long. Calvarium removed; scalp tissues infiltrated with blood at side of contusion; meninges congested; brain normal in appearance. In the fossæ of the base of the skull there are several fractures. In the left middle fossa there is a Y-shaped fracture line, commencing in the parietal bone near the squamous juncture, crossing this suture and extending forward and downward, and backward and downward through the squamous portion of the temporal bone, the anterior line in its course wounding the anterior branch of the middle meningeal artery, the posterior line entering the petrous portion of the temporal bone, involving the vessels of the middle ear and the meningeal prolongations, from which arose the bleeding and loss of cerebral fluid from the left ear. In the posterior fossa on the left side a fracture line extends from the superior curved line downward and forward to near the foramen magnum, lacerating the lateral sinus. There were two fracture lines across the floor of the right posterior fossa anterior to the lateral sinus. Also in the right middle fossa there is a fracture line crossing and lacerating the anterior branch of the right middle meningeal artery. There is extravasated blood in the fossæ. As the calvarium was raised, the dura mater noticed distended with a fresh blood clot just over the second and third frontal convolutions, accounting for the convulsive movements of the hands. Other organs normal.

E. W.

THROMBOSIS OF RIGHT MIDDLE CEREBRAL ARTERY.

J. D.; age, 39 years; nativity, Greece; admitted to the marine ward of the German Hospital at Philadelphia, Pa., January 28, 1901; died February 12, 1901.

History.—Owing to patient's inability to speak English, a complete history could not be obtained. He contracted syphilis 12 years ago. Four days before admission he was suddenly taken sick while at work. On admission the symptoms were those of hemiplegia of the left side. This condition continued unchanged until his death, February 12, 1901.

Necropsy (*twenty-seven hours after death*).—Body is that of a well-developed male. Rigor mortis well marked. Post-mortem lividity of dependent portions. The calvarium was removed. The dura is transparent, but thickened at the vertex and adherent for an area about 3.5 cm. in diameter and about 8 cm. long. The arachnoid is transparent and moist. Weight of brain, 1,310 grams. Consistency firm. Cerebrum: Section surface dry except on right side. Puncta vasculosa very marked. The veins of both sides are markedly distended, especially on right hemisphere. On section of right hemisphere there is found a large area of softening which extends laterally almost to the cortex of the temporo-sphenoidal lobe, anteriorly to anterior extremity of the caudate nucleus, a portion of which is also involved posteriorly almost to the posterior extremity of the optic thalamus. The softened area is pinkish in color, somewhat granular and spongy. The right middle cerebral artery contains a thrombus which appears to entirely occlude the vessel. The peduncles, pons, and medulla exhibit no gross alterations. Thorax: Pericardium, normal. Heart: Weight, 300 grams; valves competent; papillary muscles weak and degenerated; color of heart muscle, brownish; consistency, flaccid. Coronary arteries atheromatous in small patches. Left pleura, adhesions anteriorly and posteriorly. Right pleura, adhesions posteriorly. Left lung: Weight, 660 grams; consistency firm, crepitant throughout. Right lung: Weight, 570 grams; crepitant throughout with the exception of the upper lobe, where there was an area the size of an egg which was consolidated. Bronchial glands anthracotic. The arch of the aorta and the thoracic aorta were atheromatous. The nerve trunks and diaphragm are normal. Abdomen: Omentum normal. Spleen: Weight, 200 grams; consistency soft; capsule thickened; pulp increased; trabeculæ prominent; marked perisplenic adhesions, which are very firm. Right kidney: Weight, 165 grams; capsule adherent, otherwise normal. Left kidney: Weight, 130 grams; capsule adherent. Pelvis inflamed and contains a little cloudy fluid. Suprarenal capsules normal. Urinary bladder normal. The rectum, duodenum, stomach, and gall ducts are normal. Liver: Weight, 1,730 grams; consistency very soft; elasticity increased; capsule normal; on section surface is moist, granular; color, dark reddish brown; lobules prominent. The pancreas, mesentery, small intestines, large intestines, and the great vessels are normal. The spinal cord was not examined.

W. A. K.
H. W. A.

CEREBRAL HEMORRHAGE.

J. M.; white; age, 40 years; nativity, New York; admitted to United States Marine Hospital, Baltimore, Md., December 30, 1899; died February 11, 1901.

Previous history.—As far as could be ascertained the patient's previous history had been very fair. No evidence of syphilitic infection could be obtained, although the patient admitted the excessive use of alcohol.

History.—Owing to the patient being admitted to hospital in a semiconscious condition, the captain of the vessel upon which he was employed was questioned as to his knowledge of patient's previous history and condition, but states that he knows nothing beyond the fact that "the man was shipped Wednesday afternoon, and Thursday morning, while cleaning decks, he fell, and when found was unconscious." On Saturday the patient was brought to hospital, and at that time was practically unconscious, although he could be partially aroused by a loud voice. Physical examination showed the left arm and left leg lying perfectly limp, and when raised and released falling with complete relaxation. On the right side the muscles of the face were drawn and the right corner of the mouth was elevated. Conjugate deviation of the eyes and head to the right side. The pupils showed no irregularity. The breathing was stertorous and the pulse slow. There was no control over the sphincter muscles. Later the facial paralysis began to improve, and the mental condition cleared to such an extent that the patient could talk with a moderate degree of intelligence. Control over the sphincters was regained. There developed, however, a chronic contraction of the muscles of the left leg and arm; much more marked in the latter, in which the elbow was somewhat flexed and the wrist and fingers extremely so. Three times during the patient's stay in the hospital a convulsion, epileptiform in character, developed. The first two were neither severe nor of long duration, and the intellect, although dulled for a day or two, then regained its normal, or usual, condition. On the afternoon of February 10 the last and most severe convulsion developed, continuing for nearly an hour, the patient passing from this condition into a comatose state and dying about 2 o'clock the following morning.

Necropsy (*twelve hours after death*).—Height, 5 feet 6 inches. Post-mortem lividity well marked. Rigor mortis moderate. Pupils dilated. General nourishment poor. Circulatory organs: Heart—Unusual development of muscle fiber. All valves were competent; weight, 490 grams. Pericardial sac normal. Arteries exhibited slight sclerotic changes. Lungs: Weight of right lung, 470 grams; of left, 370 grams. Both presented a fairly well marked hypostatic congestion. The left pleural cavity was normal; the right showed slight pleuritic adhesions in various places. Gastro-intestinal tract normal, with the exception of an elongated and adherent appendix. Liver: Weight, 1,250 grams; somewhat congested. Spleen and pancreas normal, except for a well-marked sulcus running transversely across the outer surface of the spleen. Kidneys: Each weighed 110 grams, and in both the capsule was adherent, the cortex thin, and the pyramids unusually reddish and mottled. The urinary bladder and ureters were normal. Nervous system: The dura mater was decidedly congested and somewhat adherent along both sides of the longitudinal fissure. Brain: Weight, 1,500 grams; cortical portion injected. On section the right hemisphere exhibited a reddish-brown patch involving the lenticular nucleus and internal capsule, in which there had apparently been a proliferation of connective tissue and resulting scar formation. This was considered to be the position of the hemorrhage, taking place before the patient was admitted to hospital. The left lateral ventricle was filled to its utmost capacity with recently effused dark-red blood.

W. C. B.
B. W. B.

MENINGITIS.

F. W.; age, 52; nativity, United States; admitted to United States Marine Hospital, Baltimore, Md., March 4, 1901; died March 7, 1901.

History.—Upon admission to hospital the patient's mental condition was such that no history could be obtained. It was learned, however, from the captain of the vessel upon which he had been employed that the illness had lasted about two weeks, all of which time the patient had been aboard of the ship. Physical examination showed the patient to be in very shaky condition—the face dull, conjunctivæ injected, tongue tremulous and red at tip, covered posteriorly with whitish coat. Abdomen tympanitic and tender to touch. Slight subsultus tendinum. Axillary temperature, 39 C. Pulse, 102 and very weak. Respiration, 26, with slight bronchial breathing over a small area in posterior portion of left lung. The day after admission the pulse was weaker, the breathing more irregular, and the mental condition that of muttering delirium. March 6, the condition remained the same. There was an involuntary movement of the bowels, which was of a thin, offensive, and slightly yellowish character. At 12 o'clock on March 7 the pulse could not be felt at the wrist, but patient responded to strong stimulation; the rally, however, was of short duration, and death occurred at 1 o'clock that night. On admission to hospital a rose-colored rash was observed on arms, abdomen, and thighs. Did not disappear on pressure. Some spots were petechial and some very small ones hemorrhagic.

Necropsy (*eight hours after death*).—Height, 5 feet 10 inches. General nourishment good. Pupils dilated. Rigor mortis marked. Post-mortem lividity marked.

The above-noted rash disappeared after death. Heart: Weight, 470 grams; somewhat fatty. All valves competent. Pericardial sac normal. Arteries normal. Nares, larynx, and trachea normal. Lungs: Left—Weight, 600 grams. Right—Weight, 570. Several small tubercular deposits at apex. Left pleura normal. Right pleura adherent to diaphragm and posteriorly about the region of the scapula. Organs of the gastro-intestinal tract normal, except that the rectum was on the right side. Liver: Weight, 1,615 grams; anæmic; clay colored. Kidneys: Left—Weight, 215 grams; slightly enlarged, fatty; capsule nonadherent. Right—Weight, 190 grams; otherwise same as left. Ureters and bladder normal. Spleen: Weight, 425 grams. Splenic pulp soft, apparently disintegrated—somewhat chocolate colored. Membranes of brain: Dura adherent, thickened, and fibrous along longitudinal fissure and laterally on both sides. The dura and pia mater badly inflamed. The subdural and subarachnoid spaces filled with a serous exudate. Brain: Weight, 1.305 grams. The cortical vessels enlarged and injected. Other organs normal.

W. C. B.
B. W. B.

GUNSHOT WOUND OF SPINAL CORD.

J. W.: age, 29 years; nativity, Mississippi; admitted to United States Marine Hospital, Memphis, Tenn., June 1, 1901, at 9 a. m.; died June 1, 1901, at 1.35 p. m.

History.—On May 28 patient received two pistol shot wounds and was admitted to city hospital; on June 1 he was transferred to marine hospital upon the demand of his wife, arriving in a delirious and almost pulseless condition and died four and a half hours after admission. No history could be obtained from the patient and no one accompanied him from whom any information could be derived. An examination showed two bullet wounds, one on the right side, in front, just below the clavicle, junction of middle with outer third, and the second was found in the back on a level with upper margin of crest of ilium on right side and about 3 inches from middle line. Hypodermics of strychnia and whisky were administered without effect.

Necropsy (*twenty hours after death*).—Body that of a well-nourished and muscular negro; post-mortem rigidity marked. Bullet wound of back passed inward and forward, entering the spinal canal between the laminæ of third and fourth lumbar vertebræ; was then deflected upward and was found in the spinal canal just below upper margin of third lumbar vertebra, its point directed upward. The wound in the chest passed directly backward, laying bare the lower border of clavicle and could be traced no farther. The cavity of thorax was not penetrated. The different organs seemed normal, weights as follows: Brain, 1,460 grams, veins congested; right lung, 620 grams; left, 570 grams; liver, 1,950 grams; right kidney, 180 grams; left, 200 grams; spleen, 170 grams; heart, 440 grams; slight pericardial adhesion (old) at apex.

G. M. M.

HEMORRHAGE INTO BRAIN.

Left cortex.

F. E. H.: age, 30 years; nativity, Massachusetts; was admitted to the United States Marine Hospital, port of San Francisco, Cal., March 10 and died March 22, 1901.

History.—Little coherent history could be obtained of the case other than that he was an excessive user of tobacco and alcohol; that he fell, insensible, on entering a barroom; was immediately taken to a municipal receiving hospital hard by, and thence conveyed within twenty-four hours to this hospital. On arrival patient was in stupor; temperature 37.5° C.; pulse 72, fairly good; respiration 16, superficial. A superficial abrasion over right temple, no injury to scalp, and no depression of skull. The general aspect was that of a "sandbag" case, heightened by the time and locality of occurrence, but on regaining consciousness the patient denied any knowledge of assault. The left side of face and left upper extremity were paralyzed; the tongue could not be protruded. Right pupil larger than left, both responding sluggishly to light. No odor of alcohol. Bladder distended.

Treatment was at once instituted. A warm sponge bath; ice cap on head; back of neck blister 5 by 15 cm., with cantharidal collodion, and a large soap-suds enema, which brought away a large amount of feces; catheterized to 800 c. c. Calomel and bicarbonate of soda, 0.03 gram, each, well rubbed up, were placed on the back of the tongue, dry, every hour, until 20 doses were taken. Two hundred and fifty grams hot milk were injected per rectum every three hours for the first two days, when it was given by stomach tube. Within sixty hours the patient's mentality cleared sufficiently to reply to questions intelligently by nodding or shaking his head, though speechless through incoordination of muscles. Complained of headache in frontal region extending over vertex: earache in left ear: read large print, and swallowed fluids, though with difficulty. The ear was again examined with negative results, and frequent copious irrigations with warm boric acid, 2 per cent solution, begun, with hot-water bag applied, which seemed to give much comfort. This was discontinued on March 19, and two drops of warm olive oil and tincture of opium used instead; chloroform liniment was well rubbed on paralyzed limbs. Urine throughout normal.

The left bronchial monoplegia without loss of sensation, and paralysis of left leg and thigh, which became apparent on recovery of consciousness, lessened perceptibly. The excretory functions were almost reestablished and the patient was apparently improving, although still unable to speak. On March 21 the symptoms gradually increased in severity, and in the evening the entire left side became paralyzed. Preparation was made for operation to be had as soon as the light was sufficient, but the patient died quietly at 5.45 a. m. May 22, 1901. The temperature chart shows nothing of interest.

Necropsy (five hours after death).—Body that of an adult white male; 1.75 meters in height; weight, 70 kilos; muscular and fairly well nourished. Rigor mortis in lower extremities, but not in upper. Post-mortem lividity faint. Subcutaneous areolar tissue apparently normal. Anterior mediastinum and organs of chest and abdomen apparently normal. Bladder: Contains about 600 c. c. urine, no pathological lesions. Brain: Entire cortex of left hemisphere is covered by a clot of blood, partially organized and subdural. A portion of the clot anteriorly and 3.5 cm. in diameter is apparently some days old, while the posterior one is larger and of recent origin. The posterior clot is formed by a rupture of the ascending parietal branch of the middle cerebral artery. The anterior hemorrhage is undoubtedly due to the rupture of a branch of that artery, but this is undemonstrable. There is no evidence whatever of injury to the skull, and the cause of the hemorrhage is difficult to ascertain. This case is of special interest in the fact that the symptoms pointed so strongly to the lesion as being on the right side, when the hemorrhage was on the left.

A. M. M.
M. J. W.
J. M. G.

DEGENERATION SPINAL CORD.

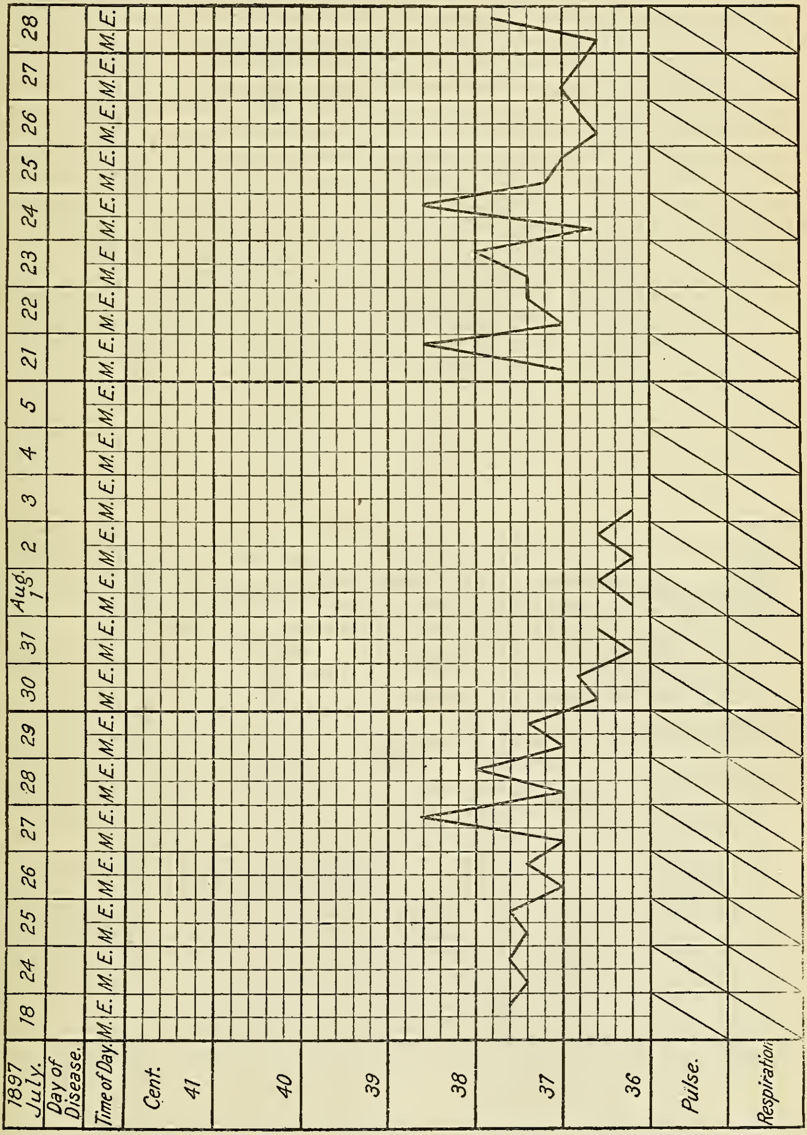
Anterior column.

J. J.; age, 43 years; nativity, Denmark; was admitted to the United States Marine Hospital, port of San Francisco, Cal., on July 13, 1897, and died June 5, 1901.

History.—Up to two years previous to admission was a healthy, vigorous man. No venereal history. Applied for relief from dyspepsia and rheumatism in arms. Two years before admission had chills and fever, to which he ascribed his illness. At that time had a numbness and slight pain in small of back. Almost immediately afterwards there arose a gradually increasing weakness of the lower extremities. This increased until he entered the hospital. At that time he was able to walk with aid of crutches, but within four months he lost the power to walk entirely. His bowels became constipated and his urine dribbled. His lungs were normal; heart normal, except a slight accentuation of second aortic sound. There was a marked paresis of lower extremities, but no atrophy of the muscles. No areas of anesthesia either of temperature or touch. Anidrosis over both legs was complete. The knee jerks markedly exaggerated. Ankle and rectus clonus present. Romberg's sign was present. Over the third and fourth lumbar vertebræ a scar, result of an injury at age of 17 years. No disability resulted at the time. Patient continued to lose power of legs and also to have incontinence of urine and constant and obstinate constipation. On March 22, 1898, a lachrymal abscess developed, which disappeared in a few days after passage of Bowman's probe and irrigation of canal with boric acid solution. Patient's legs continued weaker, and strychnine was administered hypodermatically with massage and the faradic current. He complained of continual headaches and frequent micturition, especially at night.

May 19, 1899.—Urine examination showed pus. Number of micturitions increasing. Constipation was still continuous, bowels moving only when stimulated by drugs or enemata.

September 21, 1899.—The patient's bladder is irritable and urine can not be retained. Bowels constipated. Upper extremities losing power. Hearing and sight normal. Knee jerks exaggerated greatly. Ankle clonus present; plantar reflexes absent. Tenderness on pressure over the spine most marked over the fourth and fifth lumbar vertebræ and seemed to be deep seated. Cremasteric reflex seemed increased. Pupils, speech, and mentality normal. No tremors. For past two years has had intermittent attacks characterized by an initial chill, followed by fever and pain, tenderness, and swelling of lower extremities. At same time arms as well as legs are paralyzed. Constipation became intermittent with diarrhea. Bladder condition improved under irrigation with boric acid solution, 4 per cent.

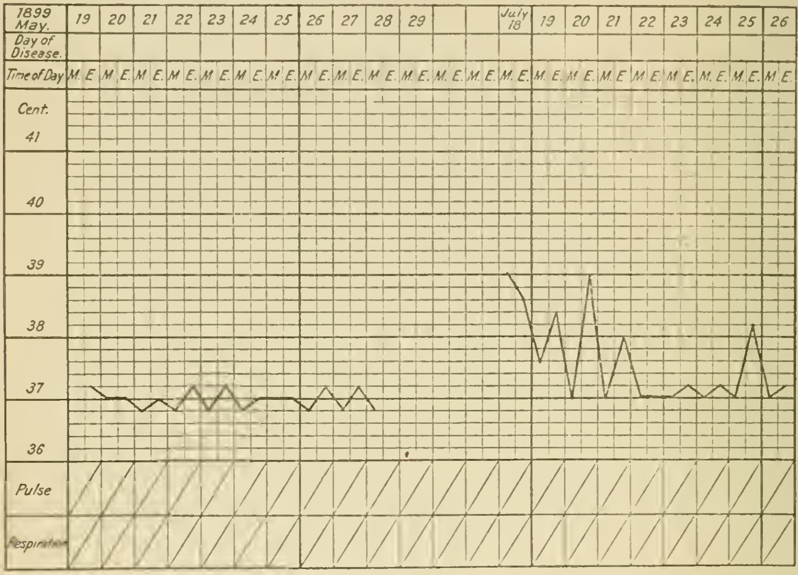


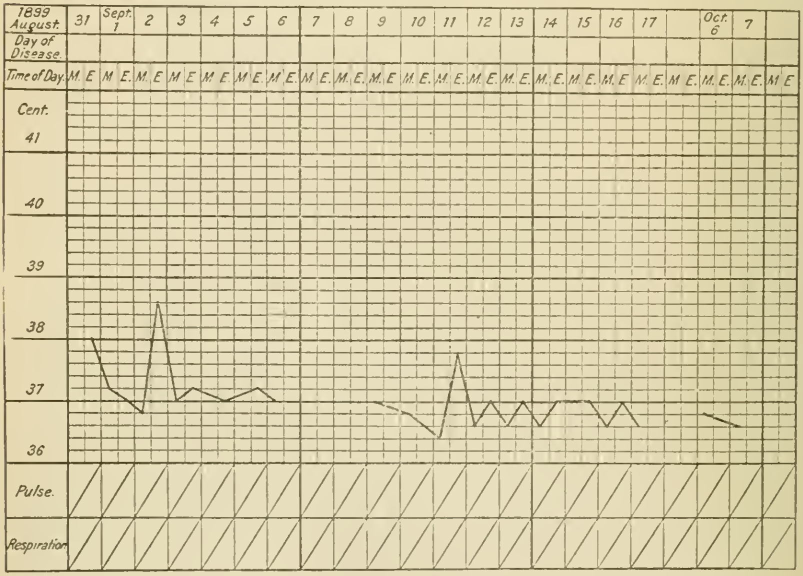
U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. J.; age, 43 years; disease, degeneration of spinal cord, lateral and posterior columns.

February 24, 1900.—Complains of tremors and pain in legs and arms at night. Testicle became large and tender. Scrotum thick and œdematous.

March 16, 1900.—A perineal fistula was found, through which most of the urine escaped. Urine very offensive. Patient continued in this condition until March 18, 1901; at times he would have an increase in the intensity of his symptoms. Constipation alternated with diarrhea of a bloody nature. The fistula in perineum remained, at times discharging a purulent fluid. An ischio-rectal fistula was also found. Patient at times suffered from headaches, nausea, and vomiting.

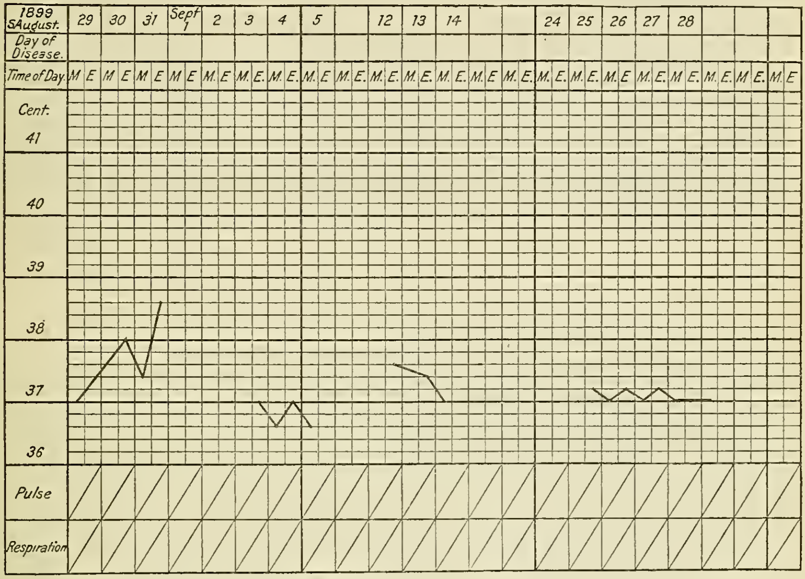
U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. J.; age, 43 years; disease, degeneration of spinal cord, lateral and posterior columns.

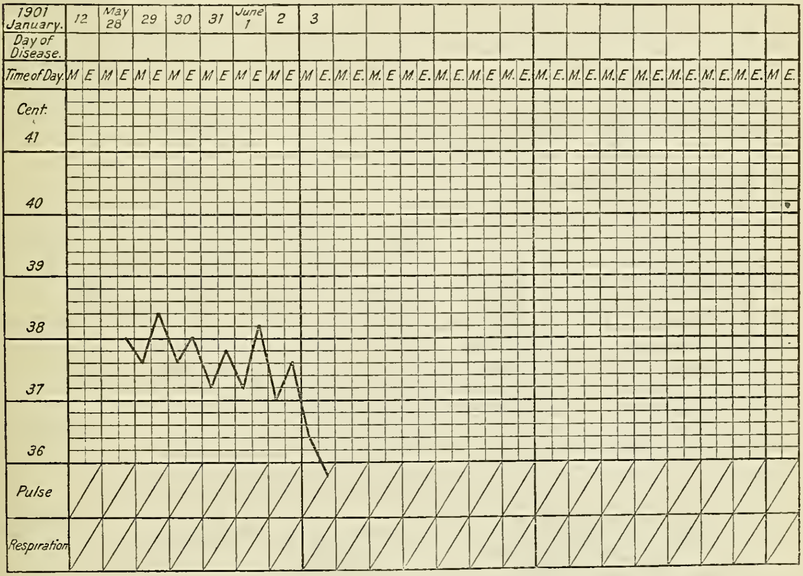




May 28, 1901.—Patient had a rise of temperature and complained of severe pains in abdomen. Had a bloody diarrhea. Pulse was small and rapid. Patient continued to grow weaker; would take very little food. He soon became comatose.

U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. J.; age, 43 years; disease, degeneration of spinal cord, lateral and posterior columns.





Exhaustion increased and pulse grew weaker until death, which occurred on June 5, 1901, at 11.30 p. m.

The treatment throughout the course of the illness was symptomatic and supportive.

Necropsy (*thirty hours after death*).—Height, 1.73 meters; weight, 75 kilos. Body is that of a well-nourished white adult male. Rigor mortis well marked. Suggillations fairly well marked all over the body. Brain: Weight, 1,400 grams; slightly congested; otherwise normal. Spinal cord: Dura and cord normal in gross appearance. Pericardium normal. Heart: Weight, 390 grams. Aortic and pulmonic valves normal in appearance. Heart muscle apparently normal. Lungs: Left, weight, 530 grams; crepitates, floats in water; apparently normal; right, weight, 760 grams; adherent to pleura and diaphragm; floats in water, crepitates; apparently normal otherwise. Liver: Weight, 2,040 grams; normal in appearance. Spleen: Weight, 340 grams; normal in appearance. Left kidney: Weight, 190 grams; capsule strips; on section a quantity of purulent fluid found in the pelvis and ureter; pelvis very much dilated; cortex diminished, a small, circumscribed abscess cavity found in the cortex; markings distinct. Right kidney: Weight, 185 grams; cortex thinned; pelvis somewhat dilated; markings distinct. Bladder: Walls extremely hypertrophied; about 2 cm. thick; cavity very much lessened; capacity reduced to about 50 c. c.; contains a purulent fluid; inside of bladder shows openings of a number of fistulæ; one opening into the rectum.

L. S. S.
C. W. V.
J. M. G.

GAMMATOUS TUMOR OF THE BRAIN.

J. J.; admitted to the United States Marine Hospital, Stapleton, Staten Island September 18, 1900; age, 37; nativity, Norway; last employed on schooner *Gracie D. Chambers;* died May 19, 1901.

History.—The patient entered the hospital formerly March 2, 1900, and remained under treatment at that time until September 17, 1900, the diagnosis being syphilis. His most conspicuous symptom at the first was intense headache., principally on the right side, but shifting, and occasionally entirely absent for a day or so. He also had pains in the feet and legs. Gait was ataxic. Pupils reacted to light and accommodation, but the right was narrower than the left. The patellar reflexes were absent. There was no evidence of anesthesia anywhere, There were no clear external signs of syphilis. He gave a history of having had venereal disease about fifteen years previously. Treatment had no perceptible effect in checking the slow progress of the disease, which was characterized by loss of nervous power, in the mental and motor systems particularly. Vision failed also, and the complaints of pain in head and feet were more or less constant. The patient was absent only one day from the hospital, when discharged in September. His condition progressed steadily, until at the last he was completely helpless, demented, and blind. The symptoms by which a tumor of the brain could have been diagnosed and its position definitely located were never clear, and there was much cause for believing that the ataxic symptoms were due to an affection of the spinal cord. The patient died in como, having had a number of similar spells previously, which lasted only briefly.

Necropsy (*six hours after death*).—Body well nourished and muscular. Postmortem lividity and rigidity of dependent parts moderately developed. Pupils moderately and evenly dilated. Right little finger missing. Two small ulcers over internal malleolus, extending deeply into the skin. Epidermis of right heel loosened, showing red derma beneath. Skullcap thin. Meningeal vessels full of dark, fluid blood. Superficial vessels of brain contained dark, fluid blood. A tumor was found in the brain case above the tentorium cerebelli, compressing the cerebellum and pons and the occipital lobes of the brain. The left occipital lobe was greatly thinned, the surface markings and gray cortex being obliterated on the median surface. The right lobe was compressed to a less extent. The tumor lay about two-thirds to the left and one-third to the right of the median line. It weighed 320 grams and was nearly the size of the closed fist. It was firmly adherent to the dura, but not to the brain tissue. Its consistence was firm and the surface nodular. The bone over the tumor was eroded and so thin as to be translucent. The great longitudinal sinus was obliterated completely where it passed over the tumor. The cut surface of the tumor appeared fibrous and had an arborescent arrangement; it cut with difficulty. A specimen about 15 cm. long of the spinal cord presented no positive gross lesions. On opening abdomen subcutaneous fat was found in good quantity. The skeletal muscles were large and dark colored. Pericardium contained a small amount of clear serum. Heart had considerable fat on surface; weight, 350 grams. Opened *in situ*. Left ventricle contracted. Right ventricle contained clotted blood. Mitral valve admitted two finger tips; tricuspid two fingers entire. Aortic and pulmonary valves competent by hydrostatic test. Myocardium of left ventricle 2½ cm. in thickness: of right, 6 mm. Aorta had small calcareous patches at its base. Left pleural cavity presented adhesions, especially posteriorly. Left lung weighed 900 grams. Posteriorly there was hypostatic congestion. Hard nodules beneath visceral pleura on outer surface of lower lobe. Froth exuded from cut surface, which was dark. Lung floated and crepitated. Right pleural cavity had only a few adhesions. Right lung resembled left, but had no nodules on its surface; weight, 720 grams. Gall bladder well filled with bile. Liver weighed 1,750 grams. Near the surface three light-colored nodules, shelling out from the liver substance: one in the lobus spigelii, 2 cm. in diameter, and one each on the upper surface of the right and left lobes, respectively. Spleen weighed 270 grams; appearance normal. Left kidney weighed 200 grams. Capsule stripped easily. Cut surface very dark. Cortex narrow; markings fairly distinct. Right kidney weighed 200 grams. Resembled the left. Large intestine contained scybala throughout. Bladder contained about 100 c. c. of urine and was firm. No further abnormalities found. On microscopical examination the brain tumor presented the appearance of gumma. No areas of degeneration could be found in the piece of cord examined.

A. C. S.
P. H. B.

INFLAMMATION OF PIA AND ARACHNOID, PURULENT.

A. C. J. B.; age, 27; nativity, West Indies; admitted to the marine ward of the German Hospital January 25, 1901; died January 28, 1901.

Clinical history.—On January 23 he went ashore and that night had chills and fever, also intense pains in head and pain in limbs and back. The following morning he vomited, and throughout the day the stomach would not retain food. On admission head somewhat flexed; muscles of the neck rigid; ptosis in left eyelid; pupils equal; pulse rapid, but full. Intense frontal headache and photophobia. Pains in back and limbs. Temperature, 39.4; pulse, 104. Mental condition very much depressed. Patient's bowels were freely moved and ice cap applied to head, and bromide and chloral administered internally.

January 26.—Temperature, 40; pulse, 104. General condition unchanged. Patient very restless.

January 27.—Temperature, 40.8; pulse, 102. Breathing very hurried. Patient comatose. This condition continued until the following morning, when he died at 7.20 a. m.

Necropsy (*four hours after death*).—Body is that of a well-developed, well-nourished colored male. Post-mortem rigidity not marked. The calvarium was removed. The dura was opaque and thickened, its inner surface presenting a dull and rough appearance. The vessels of the pia were markedly congested. The arachnoid was opaque and thickened. Brain weight, 1,300 grams (consistency soft). On section surface is moist and œdematous. Puncta vasculosa marked. Color slightly darkened. Cerebellum, pons, and medulla are normal. Thorax, pericardium normal. Heart, weight 315 grams: dilated. Mitral valves and papillary muscles thickened. Pleura normal. A few adhesions posteriorly. Left lung, weight 570 grams. Hypostatic congestion in dependent portion. Consistency firm. Crepitation throughout. Bronchi contains mucous. Right lung, weight 550 grams, otherwise same as left lung. Bronchial glands anthracotic. The great vessels, nerve trunks, and diaphragm are normal. Abdomen: Omentum normal. Spleen, weight 335 grams. Consistency soft: capsule normal. Section surface mottled gray, smooth. Pulp increased. Follicles not prominent. Right kidney, weight 160 grams; normal. Left kidney, weight 180 grams; normal. Suprarenal capsules normal. Urinary bladder normal; contents, urine. Rectum, duodenum, stomach, gall ducts normal. Liver, weight 1,570 grams. Consistency firm. Elasticity decreased. Surface smooth, edges sharp. Capsule normal. On section surface is dull, gray, and granular. Liver lobules are prominent. The pancreas, solar plexus, mesentery small intestines, large intestines, and the great vessels are normal. The spinal cord was not examined.

Remarks.—Over the entire surface of the brain there was much pus and exudate, especially in the left temporal region along the Sylvian fissure. The blood vessels were dilated and tortuous throughout. At the base much pus was also present, particularly under the optic commissure. No middle ear disease was found.

W. A. K.
H. W. A.

ALCOHOLISM—DELIRIUM TREMENS—ŒDEMA OF THE BRAIN.

J. R.; age, 32; nativity, New Jersey; admitted to the United States Marine Hospital, Chicago, Ill., October 13, 1900; died October 26, 1900.

History.—Two years ago patient experienced an attack of pneumonia. One month ago he was subjected to exposure in a severe storm at sea, during which his feet and legs were drenched. Soon afterwards his extremities began to swell and pains and cramps in the gastrocnemii muscles developed. On admission there was a superficial traumatic ulceration on the right leg, and both legs were swollen and œdematous to the knees. Frequent and painful urination was a distressing symptom, the onset of which dated from the exposure referred to. Motion of the joints caused pain after a total abstinence of two years. Patient had been drinking excessively for three weeks prior to admission and he had complete anorexia, insomnia, and a coarse muscular tremor. His mind was clear. The pulse was 120, full and bounding. Temperature normal, and remained so throughout illness. The urine contained a flocculent sediment, a trace of albumen, and a few hyaline and granular casts; spermatozoa were present in large numbers, also calcium oxalate crystals, round celled epithelium, and pus cells. The treatment consisted of exclusive milk diet, an initial purge with blue mass 0.6; tincture capsicum m. x t. i. d., and chloral hydrate 1 gram, with potass. bromid. 2 grams every four hours as necessary to induce sleep.

October 16.—Patient became extremely nervous and developed hallucinations and delusions of various sorts. The use of hypnotics produced little effect. As soon as patient closed his eyes he saw various objects, principally headless animals, funerals, snakes, etc. ℞ whisky 30 c. c. and tr. digitalis m. x t. i. d.

October 18.—The swelling of the legs entirely disappeared. The pulse, which had become feeble, improved under the above stimulation, but patient became delirious and tongue was tremulous and heavily furred.

October 20.—Patient required restraint to keep him in bed. He tore some of the bed clothing and had a muttering delirium. Whisky and capsicum discontinued.

October 22.—Stupor developed. The respiratory murmur was found to be feeble over the bases of the lungs, and dullness prevailed in the same region. ℞ ammonium carbonate, 0.6 t. i. d.

October 25.—There was cough with tenacious mucous expectoration. Cyanosis and excessive tremor; deep stupor; breath excessively offensive. The heart's action was feeble and patient had incontinence of urine. Quincke puncture of spinal canal between third and fourth dorsal vertebræ resulted negatively.

October 26.—The pulse rate, which had reached to 160 per minute, fell to 30, and the heart's action stopped a short time before respiration was suspended.

Necropsy (*three hours after death*).—Body that of an adult white male, largely developed and very corpulent. Absence of post-mortem rigidity, but some staining present. Median incision reveals a thick layer of subcutaneous fat. On opening the chest cavity the lungs were found to be in a state of hypostatic congestion at the bases. Pleuritic adhesions involved the left lower lobe. Weight of lungs: Left, 270 grams; right, 290 grams. Heart apparently normal; weight, 470 grams. The kidneys were slightly fatty, the cortex being diminished in thickness. Weight of organs: Left, 180 grams; right, 190 grams. Spleen weighed 310 grams and was normal. Pancreas normal; weight, 140 grams. The liver was fatty; weight, 2,390 grams. Stomach and intestines normal. Meninges were markedly œdematous, the serous effusion distended the subarachnoid space, dilating the ventricles. The dura was strongly adherent; weight of organ, 370 grams.

F. J. T.
H. W. S.

PARALYSIS, HEMIPLEGIA.

C. W.; age, 44; nativity, Mississippi; admitted to the United States Marine Hospital, New Orleans, La., January 5, 1901; died January 11, 1901.

History.—Patient states that twenty years ago he had a chancre that was not followed by eruption; since then he has had pneumonia, smallpox, and gonorrhea, the latter three times. Ten years ago he was shot in the abdomen, making a good recovery after operation.

Present history.—Patient arose on the morning of January 1 in apparent good health. A short time after breakfast he complained of pain in the face. This pain, at no time severe, soon shifted to the base of the skull and then down the back. While standing a short time afterwards he fell to the deck and was unable to rise on account of loss of power in the left side. He was placed in bed, and on January 5, four days after the beginning of the attack, was removed to the hospital. Up to this time there had been no loss of consciousness or mental impairment.

Condition on admission.—Examination shows a complete motor paralysis of the left side of the body excluding the muscles of the face and eyeball. The muscles of the left side of the tongue are included in the paralysis. Sensibility is unimpaired throughout the affected area. The paralyzed side, however, has a much lower temperature than the opposite side. Physical examination of the heart and lungs negative. No arterio schlerosis of arteries can be detected. Patient seemed to improve under treatment until evening of January 9, when he suddenly became unconscious, practically remaining so until his death, January 11, at 8.25 a. m.

Necropsy (eight hours after death).—Body well nourished; rigor mortis present and marked. Brain: The surface markings of the cerebrum were apparently normal, though of low grade of development. On the under surface of the cerebellum, in the digastric and slender lobes of the right side, was located an hemorrhagic infarct of recent origin. The base of this infarct measured about 2½ centimeters and extended into the cerebellar substance about the same distance. This lesion, strange to say, must have been the second attack and the direct cause of death. Proceeding with the dissection of the cerebrum, the lateral ventricles were opened. The choroid plexus of veins of both were empty; the corpus striatum on the left side was considerably more prominent than its fellow. On making section of the corpus striatum of the left side its two nuclei were found to be apparently normal. On making a section of the right corpus striatum the caudate nucleus presented an almost complete fatty degeneration; a pultaceous, structureless mass seemed to extend throughout this body. To what extent the internal capsule was affected in the degeneration could not positively be determined. The lenticular nucleus apparently was not affected. The degenerated area was somewhat darker than the normal side, in one area containing small brown particles of altered blood pigment. This process I believe to have been due to embolism of one of the antero-lateral branches of the anterior cerebral artery. The source of emboli was probably from an atheromatous ulcer of the aorta, presently to be described. Pericardium normal in appearance and contains about 30 c. c. of fluid. Heart: Weight, 360 grams; contracted, all valves intact. Aorta: In the first portion of this organ a small atheromatous ulcer of recent origin was seen. This was the only pathological process noted, and may have directly caused death by occlusion of the arteries described by fragments of necrotic tissue thrown into the circulation. Left lung: Weight, 540 grams, adherent to pleura throughout posterior part. A few scattered tubercles are seen at the apex; otherwise the structure is normal. Right lung: Weight, 650 grams; markedly adherent to costal and diaphragmatic pleura, a process no doubt due to the pneumonia mentioned in the history. Spleen: Weight, 155 grams; capsule nonadherent; structure normal. There is a tendency to the formation of supernumerary spleens at the inferior border. Left kidney: Weight, 150 grams; capsule nonadherent; structure apparently normal. Right kidney: Weight, 160 grams; capsule nonadherent; structure apparently normal. Liver: Weight, 2,080 grams; firm in consistency and pale in color, owing to a moderate degree of fatty infiltration. The capsule is adherent to the stomach, transverse colon, and a few coils of intestines, as a result of an operation following a gunshot wound. One loop of intestines, owing to the acute angle to which it was subjected, was atrophic for about 15 centimeters. The pancreas, peritoneum, intestines, appendix and bladder were normal, with the exception of the adhesions noted. Post-mortem diagnosis: Fatty degeneration of the caudate nucleus, due to occlusion of an antero-lateral branch of the anterior choroid artery and hemorrhagic infarct of the slender and digastric lobes of the cerebellum. Clinical diagnosis: Paralysis, hemiplegia.

H. B. P.
C. P. W.

PARAPLEGIA; BED SORES.

H. L.; age, 39 years; nativity, Norway; admitted to the United States Marine Hospital, Stapleton, N. Y., March 7, 1900, and died July 1, 1900.

Family history.—Negative.

Previous history.—Had three chancres and a bubo that broke spontaneously in 1873. Had gonorrhea twelve years ago; la grippe ten years ago. Had rheumatism following gonorrhea, and has suffered from it off and on since.

Present history.—Began 14 days ago with pain and weakness in small of back and pain in right side from lower edge of ribs about half way down the abdomen.

Pain extended down right leg to foot. Right leg began to get numb and have no feeling in it eleven days ago, and left six days ago. Had bad headaches for past two or three days. Appetite poor. Incontinence of urine and feces.

Physical examination.—General condition poor; has large bed sore on sacrum, another on right hip, and small ones over malleoli: heart and lungs negative; has area of hyperesthesia, just above umbilicus, encircling abdomen; below this area, and involving both lower limbs, has anæsthesia, the loss of sensation being almost total. Both lower limbs are paralyzed. Patellar reflexes lost. Paralysis of bladder and rectum muscles. Atrophic changes in both limbs marked. Cutaneous circulation poor.

Treatment.—Milk diet. Catheterized morning and night. Dress wounds with zinc oxide. ℞ Elixir ferri quin. et strych. et sirup hypophosph. Comp. aa partem equalem. M. signa: 5 c.c. t. i. d. Gentle massage to both limbs.

May 11, 1900.—Constipated; stop milk diet; bed sores have become larger and deeper and discharge considerable pus; foul odor from them. Enemas to relieve bowels effectual. General condition worse; no pain; has headaches; sleeps fairly well; has chills, fever, and sweats, which are controlled by quinine.

June 11, 1900.—Bed sores worse, deeper, larger, and offensive. Dressed with charcoal, beta naphthol, etc. General condition very poor; losing flesh; pulse rapid and feeble; limbs, marked atrophied; severe headaches; complains of cramp-like pains in abdomen; can't sleep; right pupil larger than left. ℞ Strychnia sulph., .002 every three hours. ℞ Sat. sol. potass. iodide, gtt. 30 t. i. d. Phenacetine to relieve headaches, and hypnotics, as sulphonal, trional, and morphine, to produce sleep.

July 1, 1900.—Condition rapidly grew worse and, despite stimulation, he died.

Necropsy (*eighteen hours after death*).—Body, male; aged about 50 years; extremely emaciated; eyes glazed; right pupil dilated, left contracted; rigor mortis well developed; slight suggillations in dependent portions of body; large and deep bed sore on buttocks, exposing sacrum; another over left hip and others over external condyle of left femur and over both malleoli. Skull cap, normal; brain case, fair size; sinuses and blood vessels moderately filled with blood; membranes, normal. Considerable serous fluid escaped on opening into the cranial cavity. Brain weighs 1,510 grams; vessels congested; considerable œdema; cut section shows no gross lesion; anterior mediastinum, normal; remains thymus gland, negative. Pericardium, normal position; smooth and glistening; contains about 50 c. c. of clear serum. Heart (opened *in situ*): Ventricles contain fluid blood; pulmonary vessels and aorta contain "chicken-fat" clot; weight, 220 grams; aortic orifice competent according to hydrostatic test; valves negative; slight calcareous deposits in walls of aorta; mitral orifice small and valves contain calcareous deposits in the free border. Left pleura shows numerous adhesions throughout to lung; right pleura the same. Left lung: Weight, 700 grams; floats, crepitates, and on cut section shows considerable frothy serous exudate. Right lung: Weight, 420 grams; floats and crepitates; pigmented externally; œdematous. Great vessels and nerve trunks of thorax: Aorta in ascending and transverse portions shows considerable calcareous deposit. Diaphragm normal. Omentum negative. Spleen: Weight, 190 grams; normal position; cuts easily; cut section appears yellowish and anæmic. Left kidney: Normal position; weight, 190 grams; capsule nonadherent; cut section shows distinct markings; cortex thickened and yellowish in appearance. Right kidney: Shows same gross findings as left; weight, 166 grams; suprarenal capsules normal. Ureters normal. Bladder: Mucous membrane roughened, thickened, and covered with muco-purulent exudate. Generative organs: Several scars on head of penis. Pancreas normal. Stomach normal. Duodenum normal. Gall bladder and ducts normal. Liver: Weight, 1,750 grams; cuts easily; slight yellowish appearance to cut section. Large and small intestines normal. Spinal cord removed, and about 1 inch of the lower portion of dorsal region was degenerated; degeneration was transverse; cord in this section was smaller and softer than normally. Cord placed in Muller's fluid.

J. M. K.

CEREBRAL HEMORRHAGE.

J. M.; age, 50; nativity, Russia; admitted to the United States Marine Hospital, Baltimore, Md., September 17, 1900; died September 21, 1900.

History.—Owing to patient's mental condition it was impossible to obtain a clear history of his family, previous diseases, or present illness, the only approach to the same being the statement of the captain of the ship from which patient came, who stated that several days before the arrival of the vessel in this port the patient had acted queerly and at times in a way to make him suspect that his mind was unbalanced. The captain stated further that for the past fifteen years patient had used alcoholic drinks, mostly cheap whisky, to excess. The only statement obtainable from patient was that he had a pain in the back of his head which had existed for four days.

Condition on admission.—Well developed and well nourished. Able to walk if slightly assisted. Severe pain in back of head. Mind wandering, with tendency toward depression rather than excitement.

Physical examination.—Tongue slightly coated, moist, and whitish. Upon protrusion there was deviation to the right side. Lower jaw, upon opening mouth, deflected to the right. Motion unimpaired, except as mentioned in connection with tongue and jaw. Reflexes normal. Slight anæsthesia, poorly defined, on right side of face. Temperature 36.2° C. Pulse 66, full and strong. Respiration 14 and slightly labored. No symptoms discovered pointing toward disease of any viscera other than the brain. Temperature, pulse, and respiration remained subnormal for four days, when the patient died rather suddenly on the morning of September 21. For the first three days after admission the mental condition improved quite markedly, becoming worse again for the twenty-four hours preceding death.

Necropsy (*five hours after death*).—External appearance: Height 5 feet 10 inches; general nourishment good; post-mortem lividity marked in dependent parts; rigor mortis marked; pupils normal. Circulatory organs: Pericardial sac normal and contains normal amount of fluid. Heart: Shows signs of moderate fatty degeneration; a small ante-mortem clot found in right ventricle; ventricular cavities normal in size and thickness; aortic, mitral, pulmonary, and tricuspid valves normal; weight (after opening), 380 grams; the thoracic and abdominal aorta and other arteries and veins (except those of head) normal. Respiratory organs: Nares, larynx, and trachea normal; right pleural cavity normal; left pleural cavity exhibits moderately well marked adhesions at apex and base; right lung shows some hypostatic congestion, weight 670 grams. Left lung normal, weight 425 grams. Gastro-intestinal tract: Tongue, pharynx, œsophagus, stomach, small intestine, large intestine, and rectum, normal. Gallbladder and pancreas normal; liver normal, weight 1,180 grams. Genito-urinary organs: Left kidney—congested, capsule adherent, cortex thin, malpighian bodies not well defined, weight 190 grams; right kidney—capsule adherent and cortex thin; cyst of the pelvis about the size of an English walnut, weight 180 grams; suprarenal capsules, bladder, urethra, and prostate, normal; spleen normal, weight 200 grams. Nervous system: Head and scalp, normal; skull brachycephalic; dura mater thickened and congested, adherent to arachnoid and pia at points corresponding to lower part of fissure of sylvius on each side. Under the dura, at a point corresponding nearly to the location of the bregma, was a well-defined and fair-sized hemorrhage. Brain: Located at the points corresponding to the adhesions of the meninges, on each side, as previously described, was a well-defined gumma, presenting a translucent appearance, and each about the size of a walnut. Occupying the aqueduct of sylvius and extending into and nearly filling the fourth ventricle was a blood clot; weight of brain 1,525 grams. Spinal canal, cord, and nerves, normal.

W. C. B.
G. P.

AORTIC ANEURISM.

T. M.: age, 40; nativity, Nassau; colored; admitted to marine hospital, Key West, Fla., September 26, 1899, died January 5, 1901.

Family history good; never had syphilis or any serious illness. Three or four months ago he noticed swelling over chest. For three or four months previous to that he had some pain in the chest. During the last three months there has been some interference with respiration and deglutition; some weakness and impairment of voice.

Physical examination.—Patient fairly well nourished; muscular development good. Inspection shows prominence over upper part of sternum. Respiratory movement not very full; somewhat quickened. Percussion: Area of heart dullness increased. Tumor above sternum pulsating. Auscultation: Second sound of heart accentuated. Low purring sound heard during systole; also heard over pulsating tumor, which is most prominent between second intercostal spaces.

October 4.—Patient passed a very poor night. Complains of considerable pain in sternal region. Coughed the major portion of the night. Change in voice is very noticeable; speaks as if hoarse. At different extremities the radial pulse seems variable on admission. At this date seems about equal in intensity.

October 14.—Patient is resting somewhat better. Tumor is much more prominent and by giving away anteriorly has relieved the pressure, causing respiratory symptoms.

October 23.—Patient resting fairly well. Complains of weakness.

October 31.—Patient slept very little during the night. Coughed considerably. Tumor shows no marked increase in size.

November 4.—Cough troubles patient very much, being almost incessant.

November 25, 1899.—Tumor has increased in size and soreness. Has had morphia every night for some time: sometimes two tablets during the night, 0.01 each. From this date until the date of his death the patient suffered constantly with smothering and coughing, which was relieved only by the use of morphia. Since October 9, 1899, he has had 75 c. c. of whisky daily.

January 5, 1901.—Post-mortem examination, two hours after death; inspection showed man of medium size; body greatly emaciated. Pear-shaped tumor protrudes through what was the manubrium, to a height of 3 inches above the plane of the sternum; this juts into the space between the clavicles and extends downward for 5 inches. The skin was removed from the thorax and the ribs sawn through 3 inches from sternum. The sternum was then removed by dissecting it free from the aneurism; also the pericardium and pleura, both of which were intimately adherent. This brought into view a large tumor, being the dilated portion of the aortic arch. This dilatation was almost entirely filled with layers of coagulated and organized fibrin. The first 2 inches of the aorta was normal; at this point the dilatation commenced and extended through the descending portion of the aorta to a level with the sixth dorsal vertebra. The cavity when emptied of the laminated clot formed by the organized fibrin was 6 inches long and 3½ inches in diameter. The aneurism had eroded the entire manubrium and the upper 1 inch of the gladiolus; also the sternal end of the right first rib. The trachea was deflected to the right from its normal course and attached along the side of the aneurism. The pericardium was distended with 150 c. c. of faint yellow serum. The heart was pale and flabby. Right lung nonadherent, but contained scattered masses of caseous tubercular deposits. The left lung was completely adherent to the chest wall and filled with caseous and pus cavities. Trachea was filled with thin purulent material. The patient having had no other symptoms than those recorded, and having died of starvation, there was no necessity for making further examination.

C. C. P.
R. D. M.

ANEURISM (SACCULAR), TRANSVERSE AORTA.

W. A.; age, 39 years; colored; nativity, Missouri; admitted to the U. S. Marine Hospital, St. Louis, Mo., August 22, 1900; died October 27, 1900.

Family history.—Mother died of pneumonia. Father and one brother also dead, cause unknown.

Personal history.—Had measles and whooping cough during childhood, malaria and gonorrhea in early manhood, also syphilis. At present complains of pains in chest and shoulder and of a bad cold.

Physical examination.—Anæmic, fingers clubbed, and a sinking in above clavicle, superficial glands generally enlarged. On percussion higher pitched note with greater resistance on left side of chest. On auscultation, inspiratory murmur rough and wavy. Expiration prolonged and rough, especially on left side. Diagnosis, tubercle of lung. Treatment, supportive and tonic. Discharged November 19, 1897, improved. Readmitted to hospital January 3, 1900. Complains of pains all over chest, and dyspnœa and palpitation of heart. Has some fever and some sweats at night. Bowels regular and appetite poor. Has slight cough. Examination reveals a pulsating tumor in second intercostal space, about 2 inches to left of sternum, giving distinct bruit. Left radial pulse not as full as right. Systolic murmur at aortic valve. Diagnosis, aneurism of transverse aorta. Treatment, iodide of potassium in increasing doses. Strychnine gr. 1/30 t. i. d. Codeine and phenacetin p. r. n. Discharged June 4, 1900, improved. Readmitted August 22, 1900, complaining of same trouble as above. Gives history of lifting a weight and feeling excruciating pain in back just below lower border of left scapula, and of a sensation as of something giving way. Spits up blood. On examination find dullness over entire left side of chest and respiratory sounds diminished on left side and increased on right. Complains constantly of pain, and hypodermic injections of morphia necessary at frequent intervals. Treatment supportive and to relieve pain. Death occurred on the morning of October 27, 1900.

Necropsy (*five hours after death*).—Height, 174 cm. Body poorly nourished. Rigor mortis marked. Pupil dilated. A hollow space observed between the second and third ribs, about 1 inch to the inner side of the left nipple line, about the size of a silver dime. Upon the removal of the calvarium a quantity of blood exuded from the brain sinuses. Appearance of brain congested, but otherwise normal. Weight, 1.335 grams. Upon opening the thoracic cavity the pericardium was found to be attached to both visceral and parietal pleura on both sides. On opening the pericardial sac the fluid therein was normal in appearance, but the pericardium was found adherent to the entire lower half of the heart, and inner posterior surface of pericardium was very rough. The second and third ribs were found eroded at point mentioned above, and in attempting to dissect off muscle a cyst occupying this place was opened and discharged about 50 c. c. of thin coffee-colored fluid. All of contents of thoracic cavity were so completely adhered to back and to chest walls that it was impossible to separate them except by cutting. The heart muscle was extremely friable and would tear with slightest traction. A large aneurism involves the first part of the aorta; it is 12 cm. long by 11 cm. in width, and connects by small opening with two large sacs, one occupying the entire upper lobe of left lung, the other the entire lower lobe of the same lung, and absolutely no lung tissue remained except a small portion of the apex, in size about equal to a pigeon's egg. These sacs contained partially organized clots, as also did the aneurism. Right lung adherent anteriorly and posteriorly, size 24 by 15 cm.; weight, 450 grams. Tissue very dark and crepitant. Abdominal cavity opened and upon inspection, *in situ*, the organs appear normal. Liver weighed 1.220 grams; size, 24½ by 17 by 6 cm. Tissues upon section yellowish and tough. Gall bladder distended. Left kidney, weight, 150 grams; size, 11 by 8 by 1 cm.; capsule strips easily. Tissues on section very red and hard. Cortical portion very thin. Pyramids well defined. Pelvis fatty. Right kidney, 130 grams; size, 11 by 6 by 2 cm. Cortical portion very thin. Outlines of pyramids not distinct. Stomach contains quantity of dark fluid and walls congested. Spleen, weight, 145 grams; size, 9 by 4 by 3 cm. Tissues dense and dark, chocolate colored. Bladder contains about 200 c. c. of urine, dark in color. Prostate gland somewhat enlarged. All tissues very bloody.

G. M. C.
W. G. S.

ANEURISM, DESCENDING THORACIC AORTA.

C. D.; age, 36 years; nativity, Maine; admitted to U. S. Marine Hospital, Portland, Me., November 21, 1900; died January 13, 1901.

History.—Has followed the sea all his life. Good general health. Gonorrhea eight years ago, with nonsuppurating bubo in left groin. Three ulcers on penis seven years ago with no complications. Further history indicative of syphilis is wanting. Has always taken liquors freely. In November, 1898, in a storm off Marthas Vineyard, he was in the rigging eighteen hours, in constant expectation of death. He remembers a palpitation of heart then for four hours. About May, 1899, pain in the back began and has been an almost constant symptom since. Until two years ago his usual weight had been 200 pounds. Appearance would indicate a loss of over 50 pounds on admission. Unable to do work as a sailor, he has been a cook the past year. He stuck to his work, though often in distress, and has passed many sleepless nights on account of pain. In October, 1900, he had palpitation for a week. About November 5 he vomited for two days. No history of dyspnœa or cough. Recently he has been under the influence of morphine for the severe intermittent pain, which he locates chiefly in the left hip, often in the lumbar and sacral regions, occasionally in the abdomen or left chest, or in the left thigh and testicle. He lies usually on the left side, with thighs and legs flexed, or at times finds greatest relief in the knee-chest position. He is a man 5 feet 11 inches tall, dark complexion, pallid, anxious look, scanty flesh, chest full round, while abdomen is retracted as if a rope had been drawn tight about him. Right radial pulse weak and disappears when lying on right side. Left radial pulse strong. Arteries generally rigid. No difference in pulsation of two carotids. Femoral pulse feeble. Left chest heaving with heart beat, strong pulsation in third left interspace midway from sternum to nipple. Pulsation and at times a thrill felt in epigastrium coincident with diastole. Epigastrium distended. Veins on abdomen and along thighs prominent. No œdema. No cough. Inguinal lymph glands simply palpable. A systolic blow is audible on either side of spine in lower dorsal region. In knee-chest position epigastric pulsation absent and no abdominal tumor felt. Fluoroscopic examination shows the lungs clear, heart shadow large, extending a little to the right of sternum and on the left widening out almost horizontally to the nipple, then curving down quite vertically to the diaphragm. Cardiac pulsation unusually plain to eye. Urinary examination negative. He complained often that food passed part way to stomach, then remained some minutes, and later slowly passed on, or at times regurgitated. Pain continued almost constant except when relieved by codein. Location of pain mainly in back, left thigh, occasionally in left testicle, rarely in left shoulder. Rounded pulsating tumor appeared in epigastrium and continually increased in size. Temperature was 37 to 37.5 in the morning and 37.6 to 38 in the evening. Pulse varied from 85 to 100. December 13, at 8.40 p. m., patient tasted blood and called for nurse. A moment later he began raising blood mouthful after mouthful until it amounted to about a pint. Pulse grew rapid and feeble. Soon he became comatose and no more blood escaped from mouth. Abdomen became swollen and tympanitic. Death ensued in twenty-five minutes.

Necropsy (*twenty-six hours after death*).—Body emaciated. Abdomen somewhat distended. Rigor mortis present. Abdomen opened first, contained 100 c. c. serum. Stomach greatly distended with fluid. Other viscera apparently normal. Thorax opened. Clear serum, 2,800 c. c. in left pleural cavity and 250 c. c. in right. Viscera removed after tying all vessels. Left lung weighed 195 grams and right 528 grams. Left lung compressed, crepitant only through upper half of upper lobe; right lung crepitant throughout, œdema in lower lobe. At bifurcation of trachea one calcified lymph gland found. Pericardium contained 60 c. c. clear serum. No adhesion in pleuræ or pericardium. Heart weighed 335 grams. Valves competent. Slight evidence of atheroma. Stomach measured 34 cm. on shorter curvature and 66 cm. on longer, and was 40 cm. in circumference about its middle. It contained 1,950 c. c. of clots and fluid blood. The liver weighed 2,040 grams and was of normal appearance externally and on section. The spleen weighed 290 grams, was 20 cm. long, 10 cm. wide, and 2.5 cm. thick; capsule thickened, pulp firm, dark red. Intestines negative; pancreas the same. After removal of the above viscera except the heart, the diaphragm was cut away laterally. The heart, aorta, and beginnings of thoracic branches were dissected out and the abdominal aorta from the iliacs upward. The spinal column was sawn through above the eighth rib and through the fourth lumbar vertebra and the ribs from the eighth down, and the whole mass was then removed, including the kidneys *in situ*. A large fluctuating tumor had already been felt in front of the vertebræ both from above and from below the diaphragm. After removal this mass was about 20 cm. long from above downward, 15 cm. wide, and 9 to 10 cm. thick. The sac was filled with blood clot. Examination showed a division into three parts. The original sac, 13 cm. from above down by 5 cm. in diameter, occupied the anterior portion, and is indicated in the photograph by the adjoining ends of the two canulas marked f f f, the upper "f" being an artificial opening made at arch of aorta and the lowest "f" a similar opening at bifurcation of abdominal aorta. The canula "n" passes (just above this letter) into the cœliac axis, which was much dilated and was the lowest point of the aneurismal enlargement. Canula "k k" passes through the superior mesenteric artery, which was not apparently enlarged. Burrowing from the original sac was another to the left of its upper part, which measured 7 to 8 cm. long and 5 cm. in diameter. The œsophagus ran just posterior to this, and at the deepest part of this sac was a small rupture into the œsophagus. This explained the hemoptysis on night of death, the sudden distension of abdomen, and the blood found later in the stomach. The situation of this sac also explained the difficulty in swallowing and the occasional regurgitation of liquid food. The canula "g g" passes through the whole length of œsophagus as dissected out, while "h h" is a curved canula passing through the rupture in sac and down the œsophagus to point where cut just above stomach. The point of rupture was too deep to be shown in photograph. Posterior to middle of original sac was the third, which contained the dissected out and partly eroded vertebræ, the last two dorsal and first two lumbar, and which had followed the ribs on the left and occasioned the feeling of fluctuation at upper part of left psoas muscle while sac and diaphragm were intact. This vertebral sac was 11 cm. long from above down, 13 cm. wide, and 7 cm. deep.

S. D. B.

VALVULAR DISEASE OF HEART.

Bright's disease.

S. M. (colored): age, 68; nativity, Alabama; was admitted to United States Marine Hospital March 6, 1901; died June 11, 1901.

History.—Four years ago had an attack of fever, presumably malaria. Denies having had any venereal disease. Was treated in this hospital two years ago for erysipelas. His present trouble dates back about three weeks, when he first noticed a slight swelling of the ankles at night. About same time had an acute attack of bronchitis, with shortness of breath upon exertion. Upon admission to hospital patient suffered considerably with dyspnœa; at times had to sit up in bed to breathe comfortably; the attacks resembled those of an asthmatic nature. Physical examination revealed the presence of bronchial breathing at times, but no lesion could be made out. Cough troublesome at nights. Examination of urine: Specific gravity, 1.015; acid in reaction; albumen present, about 1 per cent. Patient was placed upon a milk diet, given heart tonics and diuretics, as the amount of urine passed in twenty-four hours was about 800 c. c. Improvement was noticed for a while, then patient began to lose ground; the ankles and legs became œdematous, ascitic fluid pressing up the diaphragm aggravating dyspnœa; urine scanty. Twenty-four hours before death patient vomited black blood and suffered from hemorrhage of the bowels.

Necropsy (*fourteen hours after death*).—Body of rather undersized man; bloody discharge from mouth and nose; body echymosed over dependent parts, and upper portion very much discolored; legs œdematous, abdomen swollen, prepuce and scrotum œdematous, eczema on legs. Muscles very red; cartilage of ribs ossified; pleural cavity filled with serum; a few adhesions at apices of both lungs; lungs extremely pulpy, like splenic tissue, dark clotted blood dropping from cut surfaces; pulmonary apoplexy, both lungs having bled full. Weight left lung, 420 grams; right, 530 grams. Larynx and trachea congested and discolored. Pericardium contained some fluid. Heart hypertrophied; weight, 420 grams. Aortic valves incompetent; mitral valve dilated and covered with recent vegetations, the aorta stained a deep pink; mouth of coronary arteries very large. Liver pale in color; slightly cirrhotic; weight, 1,070 grams. Gall bladder contained some bile; duct patent. Stomach contains a quantity of bloody fluid and coats are stained black and friable, having undergone decomposition. Intestines very much discolored, coats friable and tears easily; contains considerable quantity of bloody fluid. Appendix large with dilated distal extremity. Upon opening the canal a fish bone 1 cm. long was found at distal end where the coats were thickened; the bone, however, was lying loose in the canal, which contained also some yellowish fluid. Spleen small, blue-black, and weighs 125 grams. Right kidney contains a number of cysts, size of filbert to size of buckshot. Kidney substance soft and pale. Line of demarcation between cortical and medullary substance almost obliterated; weight, 150 grams. Left kidney weighs 190 grams; many hemorrhagic spots in its substance; both organs largely disorganized. Hemorrhage into stomach and intestines, also into lungs and kidneys. As a consequence these organs were so badly disorganized that any previous pathological changes were so obscured as to be rendered unintelligible.

J. T. B.
W. P. M.

Aortic regurgitation.

A. B.; age, 45 years; nativity, England; admitted to the United States Marine Hospital, port of San Francisco, Cal., April 20; died June 4, 1901.

History.—Patient gave a history of rheumatism and syphilis. For nine months previous to admission had attacks of dyspnœa, being unable to sleep lying down. On exertion dyspnœa increased and a dry cough came on.

Examination.—Physical signs of hypertrophic dilatation of left ventricle, with characteristic "water-hammer" pulse. Œdema of feet and ankles well marked. Urine showed albumin, and a few casts.

Course.—May 12, visible pulsation of carotids 18; pulse small and rapid; dyspnœa intense. June 2, patient complained of pain in right side of chest at level of fourth rib, pleuritic in character, interfering with breathing. June 3, patient drowsy on this day. June 4, patient became rambling and died of heart failure, the pulse becoming progressively weaker. Death 2.05 a. m.

Treatment.—On entering patient was placed on potassium iodide and tincture of digitalis with strychnine sulphate. In a week patient put on a milk diet, the bowels kept open with calomel. A tonsilitis, appearing early in May, was treated with gargles and painting with silver nitrate. On May 14, the patient was placed on nitroglycerine to relieve the angina-like cramps accompanying the dyspnœa attacks. May 29, infusion of digitalis. May 31, tincture of digitalis substituted for infusion as œdema of lower extremities was pronounced. June 1, the signs of a hydrothorax appeared on the right side, but could not be determined on the left side owing to the size of the heart. Much pain at upper border of effusion. Counter irritation was employed, but did not seem to relieve. On the evening of

June 2, hypodermics of Magendie's solution of morphia were given to allay excitement. June 3, stimulants were given, but at 2.30 a. m., next day, he died quietly.

Necropsy (*nine hours after death*).—Body that of a well-nourished, muscular, adult male 1.65 m. in length; cadaveric rigidity well marked; suggillations present in upper extremity, none in lower; great œdema of lower extremities. Brain: Weight, 1,470 grams; dura not adherent, subdural space contains 200 c. c. serous fluid. Heart: *In situ* heart enlarged to left and downward, though slightly elevated by diaphragm. Weight, 750 grams. Right side of heart full of blood; contains a large post-mortem clot; post-mortem clots in all the great vessels. Coronary sinus congested. The aorta contains an ante-mortem clot. The right auricle contains a large ante-mortem clot. The aortic valve is incompetent by hydrostatic test; segments shrunken, and sclerotic, with atheromatous plates around root of aorta; wall of aorta hypertrophied. The wall of the left ventricle shows hypertrophic dilatation. The mitral valve is shrunken and thinned; the left auricle is dilated and hypertrophied. The pulmonary valves are thinned; the right ventricle shows hypertrophic dilatation. The tricuspid valve is transparent, the edges being worn thin; the right auricle is dilated. Lungs: Weight, left 580 grams, right 820 grams; float on water; marked congestion and œdema, especially in lower lobes. Right lung adherent at base and to pericardium. Liver: Weight, 2,000 grams; nodulated; connective tissue in excess; nutmeg appearance on section. Spleen: Weight 150 grams; cirrhotic; indulated; capsule adherent. Kidneys: Weight, right 237 grams, left 220 grams. Lobulated; capsule adherent; interstitial tissue in excess. Fatty degeneration of pyamids.

J. N. F.
C. W. V.
J. M. G.

Aortic and mitral.

H. J.: age, 59 years; nativity, Arkansas; admitted to United States Marine Hospital November 23, 1900; died November 24, 1900.

History.—Patient denies having had syphilis or rheumatism; was first taken sick about two weeks prior to admission. On admission dyspnœa was marked; sleeping was difficult except in sitting position; cough slight; ankles and feet œdematous. On physical examination the heart was found to be enlarged with systolic murmurs audible at both base and apex; apex displaced to left and downward; area of liver dullness considerably enlarged; spleen not enlarged.

Necropsy (*twenty hours after death*).—Body well nourished; ankles and scrotum œdematous; rigor mortis present. Brain: Weight, 1,370 grams; old leptomeningitis over vertex along longitudinal fissure, the membranes being firmly adherent to cortex and the surrounding veins engorged. Heart fatty, especially on right side: Weight, 620 grams; chicken-fat clots in all cavities; left ventricle cavity slightly enlarged and walls much thickened; aortic valves thickened and roughened and opening enlarged; mitral leaflets apparently normal, but opening enlarged admits three fingers; aorta for first inch or two thickened and calcareous. Lungs both show hypostatic congestion and pleuritic adhesions; right lung hepatized at base: Weight, left lung, 660 grams; right 1,150 grams. Liver enlarged and congested: Weight, 2,170 grams; gall bladder moderately full. Spleen normal: Weight, 360 grams. Kidneys normal: Weight, left, 220 grams; right, 220 grams.

G. U. U.

Mitral.

A. P.; age, 59; colored; nativity, Kentucky; admitted to United States Marine Hospital, St. Louis, Mo., May 13, 1901; died June 5, 1901.

History.—The patient first came to the hospital April 12, 1900, and was discharged improved April 17, 1900. He was also in this hospital from July 23, 1900, to August 20, 1900, from February 5, 1901, to February 23, 1901, from March 2, 1901, to April 12, 1901, and from May 13, 1901, to June 5, 1901, the date of his death. On all these occasions he suffered from symptoms due to the diseased condition of the mitral valve. He stated that he had an attack of rheumatism in 1874 which lasted ten days, and that he had had slight rheumatic pains ever since. He had never had a venereal sore, but had had gonorrhea several times. All his relatives were dead and he did not know what disease had caused the death of his parents. The symptoms which troubled him most was dyspnœa, which began about fifteen days before he first came to the hospital. He also had a slight cough and occasionally pains in his chest and abdomen. He had had the cough every winter for six or seven years.

Physical examination.—Body thin, apex beat of heart in sixth intercostal space a half inch to the left of nipple line. The heart dullness extends from the third to the sixth rib, and from the right edge of the sternum to a little beyond the nipple line. A loud blowing murmur is heard over the whole cardiac region. The abdomen is slightly protuberant in the epigastric region. The patient had occasional attacks of dyspnœa, but did not suffer much otherwise, except from weakness. He had no ascites or œdema of the legs. He became worse when the warm weather commenced and gradually failed until he died from exhaustion, at 10 a. m. June 5, 1901.

Necropsy (fourteen hours after death).—Body 168 cm. long, poorly nourished; abdominal muscles dark-brown color; no fat in mesentery. Intestines a reddish-gray color. Parietal eminences very prominent: skull, thin along the coronal suture; brain, weight, 1,390 grams; measurements, 18½ cm. by 15 cm. Pericardial fluid, 110 c. c. Heart, weight, 440 grams; measurements, 10 cm. by 11 cm.; leaves of mitral valves very much roughened, some of the nodules being as large as bird shot, walls of the aorta much thickened, especially at the base of the aortic valve. Left lung, weight, 400 grams; measurements, 22 cm. by 20 cm.; color, deep dark brown, crepitant. Right lung, weight, 455 grams; measurements, 23 cm. by 17 cm.; color, reddish brown, crepitant. Spleen, weight, 130 grams; measurements, 13½ cm. by 9 cm.; color on section, reddish brown; trabeculæ very prominent. Left kidney, weight, 180 grams; measurements, 13 cm. by 9 cm.; considerable fat in pelvis; pyramids not very prominent; cortical substance reddish color, very slight tinge of yellow. Right kidney, weight, 145 grams; measurements, 13 cm. by 8½ cm.; condition of tissue same as left kidney. Liver, weight, 1,180 grams; measurements, 27 cm. by 18 cm.; tissue on section, yellowish-brown color, greasy to the touch. Pancreas, stomach, and intestines normal.

W. G. S.

Aortic.

R. M.; age, 36; nativity, Kentucky; admitted to United States Marine Hospital, Louisville, Ky., January 24, 1901; died March 17.

History.—Upon admission was suffering from influenza, but presented some anomalous symptoms which induced an examination of the heart and great vessels. These symptoms were spells of dizziness, accompanied by perspiration of face and neck, and a pain described as severe running across the chest and down the left arm and forearm; came on on exertion. Had them only for eight days. The examination revealed nothing save that the first sound of the heart was prolonged, and with a booming quality about it.

January 26.—A blowing murmur was detected at the base of the heart accompanying the second sound, best heard at the second right intercostal space.

January 27.—The blowing sound is well marked, replacing the normal click of the valves. Murmur was "sawing" in character, like aneurismal bruit.

Diagnosis: Probably an inflammation of the lining membrane of the aorta, near its origin, with, possibly from, endocarditis, but more likely with involvement of the valves following it. Recorded as valvular disease of the heart, aortic.

March 17.—Attack of cardiac syncope. Death at 8.10 p. m. Never had œdema or dyspnœa, except paroxysmal. The attacks were in the beginning anginal in character, later true cardiac syncope; perfectly comfortable between attacks.

Necropsy (eighteen hours after death).—Large, muscular man, well nourished; no œdema. Pericardium extends on the right to the ribs and cartilages, on the left to the mammary line. The apex of the heart lies about 5 cm. below the left nipple; about 20 c. c. clear fluid in the pericardium. The heart is in diastole, enormously hypertrophied, the left ventricle 2.5 cm. in thickness. The muscular substance is soft, pale, and easily torn. The aortic valves are incompetent; thickened with soft fibrous patches on them, but not deformed. The ascending aorta is enlarged almost into a fusiform aneurism. The vessel is thickened, stiff, and softened, its inner lining roughened by patches of lymph and small losses of tissue. This condition extends into the transverse portion of the arch. Weight of the heart, 1,000 grams. The lungs were in a state of hypostatic congestion. The intestines were empty and normal. The stomach was empty also, with dark venous congestion. Appendix arises from behind and a little internal to the cæcum coli, is pointed directly upward behind the colon; length is about 8 cm.; it has a meso-appendix. The liver is enlarged and congested. The other organs were not examined.

H. R. C.
M. K. G.

VALVULAR HEART DISEASE.

J. S.; age, 54; nativity, Scotland; admitted to United States Marine Hospital at Stapleton, port of New York, N. Y., January 18, 1901; died January 25, 1901.

Height, 5 feet 6 inches; weight, 160 pounds.

Family history.—Most members of family long-lived. Father suffered much from rheumatism. One brother died of miliary tuberculosis.

Previous sickness.—Had typhoid fever years ago, also an attack of gonorrhea. Has used alcohol and tobacco. Patient has been in this hospital ten times; the first three for rheumatism, and the last seven for heart disease and rheumatism. In November, 1898, he came here with symptoms of heart disease of three weeks' duration, consisting of shortness of breath, edema of extremities, cough, and disturbed stomach. During his stay he had occasional slight rheumatic attacks in various joints. The cardiac signs were then described as enlargment, and a presystolic murmur at the apex, loud and localized. There were at first signs of pulmonary congestion and albuminuria, these later subsiding. There were also signs of pleurisy. After a stay of two months he was able to go out. The successive visits resemble the first, differing only in the severity of the symptoms. Under rest and appropriate medication compensation became reestablished, only to fail again on the resumption of active life. At a physical examination made October, 1900, the heart was found enormously enlarged, its action extremely irregular; there was a loud mitral murmur occupying the second sound and also an aortic murmur of indeterminable occurrence with reference to the sounds. Signs of an old pleurisy were found on the right side of the chest, and even some acute effusion was suspected, although no fluid was obtained upon aspiration. The urine was but slightly albuminous and no casts were present. There was extreme dropsy, cough, dyspnœa, and gastric disturbance.

Upon leaving here, at his request, on January 7, 1901, he was warned as to the danger of his attempting hard work again.

When brought to the hospital in the ambulance the last time, January 18, his condition was very bad; he was apparently in extremis. There was great edema of the legs, orthopnœa, enormous distention of the cervical vessels and cyanosis. Bloody mucus was coughed up at intervals. The heart was apparently much enlarged and its action was very irregular. To-and-fro murmurs were everywhere audible, and pulsations at the wrist did not correspond to the heart beats, only a few of the latter reaching it. Under the influence of rest he improved slightly for a few days, then sank into a stuporous condition, cyanosis increased, dark blood was coughed up but not expelled from the mouth, catheterization became necessary, and he died without regaining consciousness. His muscular and adipose tissues did not suffer much. There was no fever during his last stay.

Medication was symptomatic and the employment of such remedies as digitalis, strophanthus, spartein, nitroglycerin, salicylic acid, potassium iodide, elaterium, etc., when indicated.

Necropsy (thirty hours after death).—Body that of a male, apparently about 50 years of age. Rigor and post-mortem lividity present; body well nourished and muscular; pupils evenly and moderately dilated; legs somewhat edematous. On incision considerable subcutaneous fat found; skeletal muscles well developed and of a dark color. Mediastinum. Great increase of area occupied by the heart and abnormal separation of the anterior edges of the lungs. Thymus remains not found. Pericardium contains an abnormal amount of clear yellow serum; its surface is smooth and white. Heart is very large. Opened *in situ* and both ventricles found to be dilated, the right very markedly. The right ventricle contains fluid and clotted blood, the left is practically empty. On removing the heart both the aortic and the pulmonary valves are found insufficient to the hydrostatic test. The right auriculo-ventricular orifice admits three fingers easily; the mitral orifice barely admits one finger, is of crescentic shape, and is narrowed by the contraction and adhesion of the valve leaflets. The leaflets of the aortic valve are much thickened, those of the pulmonary and tricuspid valves to a less extent, and those of the mitral valve enormously thickened and the seat of numerous calcareous deposits. Myocardium, especially of the right ventricle, much reduced in thickness. Heart weighs 590 grams. Left pleural cavity is free from abnormal fluid or adhesions. Right pleural cavity is almost entirely obliterated by old adhesions. The lungs resemble each other in being edematous and congested, floating in water, and exuding frothy blood and serum from the cut surface. Omentum contains a large amount of fat. Spleen weighs 240 grams; is firm and dark colored. Left kidney weighs 240 grams, is firm, cuts a little hard, and presents on cut section a dark surface with fairly distinct markings, light-colored striæ being visible in the pyramids, and the cortex of nearly normal thickness. Right kidney weighs 260 grams and otherwise resembles the left. Liver weighs 1,410 grams; appears abnormally small. On gross section a mottled yellow surface is presented, with an apparent increase of fibrous tissue about the blood and bile vessels. The liver substance is firm and cuts with resistance. The stomach and intestines were not opened, but presented no abnormal external appearances. Bladder contains about 2 ounces of urine. Brain and spinal cord not examined.

A. M. S.
G. W. S.

Mitral regurgitation—Endocarditis.

R. H.; age, 36 years; nativity, Sweden; was admitted to the United States Marine Hospital, San Francisco, Cal., August 13, and died August 29, 1900.

History.—The patient had suffered from rheumatism four years prior to his entry into the hospital. He complained of pain in his chest, cough, expectoration, and urgent dyspnœa, all of which had appeared about two weeks previous to admission. The patient had lost about 30 pounds weight within two months. He was pale and emaciated. Physical examination revealed slight dullness, increased vocal fremitus, and a few râles over the apex of the right lung. The area of cardiac dullness was found to be slightly enlarged, and on auscultation a loud systolic murmur was heard at the apex, and was transmitted not only into the axilla and the back, but was audible at any point upon the thoracic wall. The pulmonic second sound was accentuated. The pulse was rapid (106) and weak.

An examination of the urine showed it to be of high color and specific gravity, and revealed the presence of a large quantity of albumen and of hyaline and coarsely granular casts. There was present also a large quantity of degenerated granular kidney epithelium.

The patient showed some slight elevation of temperature when he entered the hospital, but at no time during his illness did the thermometer record more than 38° C. He was placed upon a course of digitalis, first the tincture, later the infusion, but though the dose was greatly increased nothing sufficed to slow or strengthen the beat of his heart. On the 19th of August it was found that the dullness had extended to the base of the right lung, over which slightly bronchial respiration and fine, moist râles were heard. The expectoration became profuse and purulent, and the dyspnœa increased markedly. The patient grew steadily weaker and more dyspnœic. Digitalis was abandoned, and a mixture of caffeine and strychnine administered in its stead. On August 28 he was quite stupid and delirious, talking incoherently, and acting as though he were suffering from intoxication with some poison. As the patient was passing only 800 c. c. of urine daily, uræmia was suspected and he was put upon potassium acetate, but of no avail. On August 30 stupor had increased almost to coma; the pulse was rapid and feeble, and the breathing labored and difficult. At 2.30 p. m. the patient died. At no time during the course of his illness was there any evidence of œdema or cyanosis.

Necropsy (*twenty-four hours after death*).—Body that of a poorly nourished, white, adult male. Pupils not dilated. Hypostasis of dependent parts. Rigor mortis still persists. Panniculus adiposus is scant and dark colored. Abdominal cavity contains a dark reddish fluid. Omental fat is scanty and dark. Diaphragm is attached anteriorly on a level with the fifth rib. Left plural cavity contains about 500 c. c. of dark reddish fluid. There are a few small adhesions posteriorly near the base. Right plural cavity is obliterated, both layers of the pleura being adherent over their whole extent. Pericardial cavity contains 100 c. c. of clear straw-colored fluid. Heart: Weight, 600 grams. The organ is enlarged and pale. The left ventricle is full of dark clots, the right one also containing some, which are lighter in color. Left ventricle shows a hypertrophy with some dilatation. Right ventricle is dilated. The pulmonary valves are normal except some slight thickenings at their free edges. The aortic valves do not sustain a column of water, their free edges being heavily studded with vegetations. The left leaflets are bound down by shortening of chordæ tendineæ. The tricuspid valve is normal. Lungs: Left appears much congested; is bluish-black posteriorly; it crepitates throughout. The apex is more firm than the rest, On section it is red and firm; on pressure quite an amount of bloody fluid can be expressed; weight, 900 grams. Right lung is darkly pigmented and covered with adhesions. It is quite small and crepitates but little. The cut surface is quite dry, and is mottled red and brown; weight, 600 grams. Spleen: Weight, 329 grams; is very large (17½ by 10 by 5 cm.). The surface is mottled purple and blue. Its shape is irregularly triangular. The cut surface is brownish red. The pulp is semifluid, soft, and mushy. The malpighian bodies are invisible, being overlaid by pulp. Left kidney: Weight, 140 grams. Perinephritic fat is scanty. The organ is flabby and pale. Near the outer border is a small shallow depression with a white base. The cut surface is pale and the markings indistinct. The cortex is thickened. In one of the pyramids, near the apex, is a white spherical body, 1 mm. in diameter. Right kidney: Weight, 155 grams; practically the same as the left. Gall bladder is moderately distended with dark-brown fluid. Liver: Weight, 2,000 grams; slightly enlarged; surface smooth; capsule of normal tension. The surface is pale with blood-stained areas; consistency normal. White spot, 2 cm. in diameter, is seen on the upper surface of the right lobe. The liver is pale on section. It shows evidence of fatty change. Blood exudes from the cut surface. Intestines are moderately distended with gas, otherwise normal. Bladder is slightly distended with urine. Dura mater shows evidence of recent inflammation along the longitudinal sinus. There is a small amount of fibrin on the pia mater of the superior surface of the cerebrum. Brain: Weight, 1,420 grams. Is very soft and tears easily, probably from post-mortem change. On section it shows no abnormality.

R. L. W.
J. M. G.

Aortic and mitral.

G. W. P.: age, 44; nativity, Scotland; admitted to the United States Marine Hospital, Boston, Mass., March 24, and died July 10, 1900.

On examination, the following points of interest were revealed: Patient suffers from dyspnœa, which is increased on exertion, pain over cardiac region, insomnia, dizziness, headache, and palpitation of the heart. A physical examination shows, on inspection, a diminished inspiration with a prolonged expiration, also a distinct carotid pulsation. On palpation the apex beat is stronger than normal and displaced downward and to the left. Can also feel a distinct auricular thrill over the third and fourth left intercostal spaces. Patient has a distinct Corrigan pulse. On percussion there is an increased area of cardiac dullness, both relative and absolute. On auscultation there is a loud, rough, and blowing diastolic murmur heard over the aortic area and transmitted along the left border of the sternum. There can also be heard a soft blowing systolic murmor over the mitral area, transmitted toward the axillary line. Patient was put to bed and given heart tonics.

On June 15 the patient began expectorating blood and presented a very anxious countenance; there was some œdema of the feet and legs. On July 10 patient died from heart failure.

Necropsy (*thirteen hours after death*).—On inspection the feet and legs were very œdematous, pupils equally dilated, rigor mortis present only in the lower extremities, post-mortem lividity marked, mouth filled with dark frothy blood. Circulatory organs: Heart three times its normal size, the walls slightly hypertrophied and shows some fatty degeneration. The ventricles and auricles were very much dilated. Weight of heart was 500 grams. The valves, both aortic and mitral, were incompetent. The arteries were normal. Respiratory organs: The nose, larynx, and trachea were normal. The left lung was congested and weighed 570 grams. The right lung was congested and weighed 1,100 grams. The pleural cavity and pleura were normal. Gastro-intestinal tract: The tongue, pharynx, œsophagus, stomach, and intestines normal. Liver was nutmeg in appearance and weighed 1,400 grams. The gall bladder was filled with bile. The spleen weighed 150 grams. The pancreas weighed 100 grams. The kidneys were normal in appearance, the left weighed 180 grams, the right weighed 200 grams. The brain was normal and weighed 1,250 grams.

F. I.

Mitral and aortic.

G. O.; age, 37; nativity, Norway; admitted to the United States Marine Hospital, Boston, Mass., October 24, 1898; died July 4, 1900.

History.—When admitted to this hospital, it was found on examination that he had been a sufferer for several years from dyspnoea, fainting spells, dizziness, palpitation of the heart, and had on several occasions expectorated blood. He gave a history of having had quite a severe attack of rheumatism some years back. A physical examination was made and the following points observed:

On inspection patient was anemic; had lost considerable flesh; there was marked dyspnœa, increased on the slightest exertion, also strong pulsation of the carotid arteries. On palpation there was a distinct water-hammer pulse; an auricular thrill over the third and fourth left intercostal spaces; apex beat was more forcible and displaced to the left and farther down than normal. On percussion there was an increased area of cardiac dullness, both absolute and relative. On auscultation there was long, loud, and rasping diastolic murmur, heard at the aortic interspace, and transmitted along left of sternum; also to be heard a soft, blowing, systolic murmur over the mitral area and transmitted around to the scapula. The patient was put to bed and given digitalis, strophanthus, strychnia, and other heart tonics as the symptoms demanded. He was kept under this treatment until November 29, 1898, when he was discharged at his own request. In the meantime he had improved very much. On August 7, 1899, he was readmitted as having become worse. An examination was made and the above symptoms were again revealed; patient was put to bed and the same treatment as before given him, but he gradully grew worse. On August 18, 1899, it was noticed that his kidneys were being involved. An examination was made of his urine and it was found that nephritis had supervened. The patient died on July 4, 1900.

Necropsy (*July 4, 1900, at 2 p. m.*).—External examination: Patient was very much emaciated; skin of a waxy appearance, feet and face œdematous, pupils equally dilated; rigor mortis marked; post-mortem lividity slight. Chest: Pleural cavity contained about 2,000 c. c. of fluid; there were no adhesions present. Circulatory organs: Heart, pericardial sac dilated and contained 100 c. c. of fluid; heart very much enlarged, weight 280 grams; right ventricle empty, was somewhat dilated and hypertrophied; right auricle dilated; left ventricle, filled with dark clots of blood, was hypertrophied and very much dilated; left auricle hypertrophied and dilated; the aortic mitral and pulmonary valves showed calcareous deposits; arteries normal. Respiratory organs: Nose, larynx, trachea, and bronchi normal; left lung congested and feels leathery, on section is mottled, weight 1,050 grams; right lung congested, leathery, and on section is mottled and filled with brownish, frothy fluid, weight 900 grams; pleura normal. Gastro-intestinal tract: Tongue, pharynx, œsophagus, stomach, and intestines normal; liver normal in appearance, weight 2,100 grams; pancreas normal, weight 140 grams; spleen congested, enlarged, and lobulated, weight 410 grams; suprarenal capsules normal. Urinary tract: Both kidneys very much enlarged; they were the typical large white kidney, right one weighed 270 grams, left one, 310 grams. Bladder: The wall was thickened and contained 100 c. c. of urine; peritoneal cavity contained large amount of fluid. Brain normal in appearance; weight, 1,370 grams.

F. I.

Aortic and mitral.

E. J.; age, 22 years; nativity, Norway; was admitted to the United States Marine Hospital, Boston, Mass., March 2, and died July 12, 1900.

History.—On admission an examination was made and the following points revealed: The patient suffered from dyspnœa, increased on exertion. He also suffered from dizziness and pain in the left hypochondriac region and in the lumbar region. Physical examination showed a soft blowing systolic murmur over the mitral area transmitted around toward the scapula. On March 14, 1900, another physical examination was made of the heart and there was found a rough, loud, and blowing diastolic murmur over the aortic region transmitted along the left border of the sternum. There was also a distinct Corrigan pulse. Patient was put on heart tonics, but continued to grow worse. On June 15 the patient became paralyzed on the right side. He died on July 12.

Necropsy (*eleven hours after death*).—Rigor mortis was marked. Post-mortem lividity was slight. Patient was very much emaciated and presented an æenemic appearance. His feet and face were œdematous, pupils equally dilated. Circulatory organs: The pericardial sac was filled with fluid. The heart was pale and flabby and covered with a serous exudate. The left ventricle and auricle were hypertrophied and dilated; the right ventricle and auricle were dilated. The heart weighed 680 grams. The mitral, aortic, and pulmonary valves were covered with vegetations. Respiratory organs: The pleural cavity was filled with fluid. The left lung was normal in appearance, slightly emphysematous; weighed 660 grams. The right lung normal in appearance, slightly emphysematous, and weighed 1,160 grams. Gastro-intestinal tract: The stomach was filled with gas. The intestines were normal. The liver normal; weight, 2,410 grams. The pancreas normal; weight, 200 grams. The spleen very much enlarged and congested. It showed an amyloid degeneration and also presented a suppurating focus; weight, 800 grams. Urinary tract: The left kidney was slightly congested; weight, 260 grams. The right kidney presented yellowish-white spots on cross section, about the size of a hazelnut; weight, 250 grams. The bladder was normal. The brain was normal; weighed 1,420 grams.

F. I.

Aortic and mitral.

J. H. G.; age, 23 years; nativity, Maryland; admitted to the United States Marine Hospital, Baltimore, Md., December 22, 1900; died December 27, 1900.

History.—Father dead; cause unknown; mother living and well; never had any brother or sisters.

Personal history.—Tobacco and alcohol used in moderation; had the diseases of childhood, pneumonia (right), and gonorrhea, the latter one month ago. About a month ago was exposed to continued bad weather for some time, after which he soon developed two chills and had rather severe pain in left chest, coupled with some fever and loss of appetite. On admission to hospital, patient was in poor general condition, decidedly weak and with marked dyspnœa and pain in chest, most marked over left anterior portion. Temperature, 39.4; pulse, 100. Physical examination showed the movements of the chest to be somewhat diminished, dullness over the left chest, posterior, coupled with diminished vesicular sounds. Cardiac dullness was increased, particularly in a lateral direction; at the apex was heard a systolic murmur, blowing in character, and transmitted to the axilla. At the ensiform cartilage was heard a softer systolic murmur. Over the aortic valves was heard a diastolic murmur. Visible pulsation was plainly evident in the peripheral vessels. Palpation showed a very pronounced Corrigan pulse. On auscultation of the carotids, subclavians, and femorals double murmurs were heard. Notwithstanding treatment the patient continued to grow steadily worse, the dyspnœa more pronounced, the pain more severe, and the weakness more marked. Death came suddenly at 6.35 p. m. December 27.

Necropsy (*fourteen hours after death*).—Post-mortem lividity slight. Rigor mortis marked. General nourishment good. Circulatory organs: Heart, weight, 610 grams; left ventricle markedly dilated; walls 1 to 2 cm. in thickness; right ventricle also enlarged and dilated; walls somewhat thinner than left. Both ventricles contained a post-mortem clot; both auricles were dilated, the right to twice its normal capacity; all the valves of the heart were incompetent; vegetative processes presented at the aortic valve; the aorta and other vessels were normal. Respiratory organs: Right lung, weight, 1,170 grams; congested. Left lung, weight, 800 grams; somewhat congested, but not as much so as right; at the apex of this lung, near the anterior border, were four or five very small tubercles. Right pleural cavity contained 650 c. c. of serous fluid. The left pleural cavity contained 560 c. c. of fluid and presented a few slight adhesions in the mid-axillary line. The gastro-intestinal tract was normal with the exception of the stomach, which was dilated. Liver: Weight, 2,060 grams; congested. Kidneys: Right, weight, 205 grams; normal. Left, weight, 200 grams; cortex thickened and capsule adherent. Brain: Weight, 1,250 grams; dura mater slightly adherent along the central part of the median fissure.

W. C. B.
G. P.

Mitral regurgitation.

J. S.; age, 48 years; nativity, Germany; was admitted to the United States Marine Hospital, port of San Francisco, Cal., July 20, and died August 2, 1900.

History.—Patient was under treatment at this hospital from August 19 to September 16, 1898, with a diagnosis of Bright's disease, granular kidney. He complained at that time of swelling of the feet and legs and dyspnœa on slight exertion. He also had ascites, and on August 27 was tapped and 12 liters of straw-colored fluid withdrawn. Urine showed nothing abnormal. September 16 he was discharged and on September 17 was readmitted under the diagnosis of inflammation of liver, chronic. On October 17, 1899, was discharged improved. He was admitted again February 28, 1900, and diagnosis made of valvular disease of heart, mitral regurgitation. He complained of swelling of ankles and distress in region of stomach; was also troubled with dyspnœa on exertion. Abdomen distended and tense; area of heart impulse increased, and systolic murmur accentuated; was discharged improved May 9, 1900. Was admitted the last time on July 20, 1900, and diagnosis made of valvular disease of heart, mitral regurgitation. Complained of swelling of abdomen, ankles, and legs, and dyspnœa on exertion. Examination showed patient to be cyanotic and weak; pulse rapid and quite feeble; abdomen distended; ankles swollen and œdematous; heart greatly enlarged, left border being about 5 cm. outside of nipple line; apex beat in sixth interspace 5 cm. outside mammary line. Mitral regurgitant murmur heard over apex; aortic second, entirely lost; pulmonic second, about normal.

Patient was put on the ordinary treatment for mitral regurgitation with failure of compensation. He was confined to his bed, put on a liquid diet, given digitalis and strophanthus, and saline cathartics in concentrated solution. He enjoyed temporary improvement, the swelling in feet and legs disappearing; the ascites, however, continued obstinate to medication, but gave the patient little distress. On August 2, while sitting up in bed, contrary to orders, his heart failed him suddenly and he died in a few minutes.

Necropsy (*eight hours after death*).—Body is that of a well-developed, well-nourished, white, middle-aged male. Lividity well marked; lower extremities œdematous, and abdomen distended. Thorax: Right pleural cavity filled with 1,500 c. c. of straw-colored fluid. Left pleural cavity also contains a small amount of fluid. Pericardial cavity contains about 150 c. c. of fluid. Abdominal cavity contains about 5,000 c. c. of clear fluid. Omentum is adherent to anterior abdominal wall. Lungs: Right, weight, 1,150 grams; a few small adhesions anteriorly and many strong ones at base; œdematous and much hypostatic congestion in lower lobe; bronchial tubes congested. Heart: Weight, 825 grams; enlarged to twice normal size; fatty, pale, and shows "milk spots." Ventricles filled with firm black clots of blood, cavities dilated, walls hypertrophied. Mitral valves incompetent from dilatation of heart; also sclerosis of valves and chordæ tendinæ. Auricles filled with mixed clot. Other valves normal, except one segment of aortic which shows sclerosis. Liver: Weight, 1,150 grams; covered with many adhesions; capsule thickened; several scars on surface. Section shows purple spots surrounded by white areas. Oozes on section. Spleen: Weight, 137 grams; adherent to diaphragm, firm, and dark on section. Malpighian bodies prominent. Capsule thickened. Kidneys: Left, weight, 190 grams; shows remains of fetal lobulation; capsule thin and nonadherent; a depressed surface with white base on convex border; perinephritic fat scanty and dark; surface pale purplish and granular. Section shows scar tissue in bottom of depression on convex border, and also a cone-shaped red mass with base about 1.5 cm. in diameter on periphery of kidney. Kidney dark purplish and cyanotic on section, cortex one-third of thickness. Right: Weight, 250 grams; shows fetal lobulation and scars similar to left.

A. M. M.
R. L. W.

Microscopical report.—Heart muscle: Cells quite large, nuclei especially larger than normal; cell bodies somewhat cloudy in appearance, and the usual transverse striations can not be seen; quite a quantity of stagnated blood between the fibers. The branches of the coronary arteries appear to be quite normal; no narrowing of their lumen. Coronary veins are distended with stagnated blood. Kidneys: Parenchyma cells of the convoluted tubules are somewhat swollen and cloudy. Their nuclei are present, but somewhat indistinct. Here and there a hyaline cast may be seen within one of the tubes. The cells of the conducting tubules are normal. Malpighian bodies: Here and there one may be seen involved in the process of hyaline degeneration. In all, the capillary tufts are full of stagnated blood. The same is true in all the blood vessels throughout the organ. The interstitial connective tissue has proliferated slightly, due, probably, to the long-continued venous stasis. In one portion a triangular area is seen, in which the normal kidney structure is replaced by a dense meshwork of connective tissue, in which may be seen the shrunken remains of the old tubes as blue, shapeless, granular masses. Over this area the surface of the kidney is depressed. Diagnosis: Old anæmic infarction. In another place there is seen another triangular area, over which the surface of the kidney is still rounded. The adjacent tissue surrounding the area is intensely hyperæmic. In the area itself the kidney structure is seen in a state of recent necrosis. The tubules are broken down and granular. They show no nuclei, but scattered among them the darkly staining granules of nuclear débris may be seen. The Malpighian bodies are in the same condition. Diagnosis: Recent anæmic infarction. Liver: In a very advanced state of cyanotic atrophy. In the center of the liver lobules small pools of stagnated blood may be seen. In such places the liver cells are entirely destroyed. A little more toward the periphery of the lobule the cells are merely small and atrophic. At the periphery itself the cells are apparently normal. Spleen: Capsule is rather thick and dense; otherwise normal. Trabeculæ, close together and slightly thick; fairly dense. Malpighian bodies are close together and very large. They show a beginning hyaline degeneration. The adventitia of the Malpighian arteries is markedly thickened. Pulp shows an intense stagnation hyperæmia. The cells of the pulp are mostly lymphocytes and spleen cells. In some places the fibroblasts are arranged in rows, betokening a beginning induration. An occasional plasma cell may be seen. Lung: The septa are normal, except that their capillaries are distended with stagnated blood. Some of the alveoli are filled with coagulated œdematous fluid. Others are filled with extravasated blood. The specimen was taken from the base of the lung, where the hypostatic congestion was most marked.

M. E. L.
R. L. W.
J. M. G.

Sprain of back, valvular disease of the heart, aortic, vegetations.

T. S.; age, 23; nativity, Georgia; admitted to the United States Marine Hospital, Evansville, Ind., January 24, 1901; died January 27, 1901.

History.—On January 21, 1901, he was trying to get the hoisting engine of the boat off "dead center" by pulling on the fly wheel. The engine started with a sudden jerk and gave the patient a severe jerk and wrench. The pain and stiffness of the muscles of his back, arms, and right lumbar region increased, but yet when the boat returned to this city on January 23, 1901, he went to his home. On the next day he entered the hospital. The muscles of the regions mentioned above were quite stiff and painful. His heart trouble bothered him not at all. In fact, it was a typical case of compensatory hypertrophy, and there were no subjective symptoms of heart trouble complained of. On the 26th he had a little rheumatic pain in both ankles, but sodium salicylatis relieved this pain. His appetite was good and bowels were regular. On the morning of the 27th he felt better, and during the day was up and about in an invalid chair. In the afternoon after being in the smoking room talking and smoking a cigarette for a half hour or so he suddenly fell out of his chair and was dead before medical aid could be given him.

Necropsy (nineteen hours after death).—Body well nourished. Pupils dilated. Rigor mortis well marked. Heart: About 100 c. c. clear fluid was found in pericardial sac. Heart enlarged. External veins of heart engorged. Left ventricle hypertrophied. Aortic valves had vegetations along their edges. Other valves normal. Heart weighed 567 grams. Right lung: Weight, 387 grams; normal. Left lung: Weight, 322 grams; normal. Liver: Weight, 1,760 grams; slightly congested, otherwise normal. Spleen: Weight, 185 grams; normal. Pancreas: Weight, 112 grams; normal. Right kidney: Weight, 243 grams; normal. Left kidney: Weight, 220 grams; normal. Other organs and tissues normal.

J. H. O.

Acute lobar pneumonia.

J. R.; age, 50; born in Tennessee; colored; admitted to the United States Marine Hospital, Louisville, Ky., January 17; died January 21, 1901.

History.—Taken sick suddenly on the 13th instant; does not think that he had a chill; felt weak and badly and pain in right side; previously had enjoyed good health. Temperature on admission, 39.6; pulse, 160; small, weak, and compressible. Respiration, 41; superficial in character; complains of pains in both sides of chest and in front; continuous but not severe; increased by coughing. Coughs little; is dull and somnolent. Examination shows upper lobe of right lung consolidated, with coarse bronchial breathing and moist râles. In lower lobe consolidation is also progressing, as evidenced by crepitant râles and tympanic resonance. Over the left lung râles of varying character, all moist, are heard. No part of it is consolidated. The lower lobe soon became in the same condition as the upper, and all the bad symptoms increased, the patient dying after three days. Albumenuria from the beginning.

Necropsy (six hours after death).—Body exceedingly spare, but fairly well muscled; cutaneous fat almost entirely absent; rigor mortis moderate. Abdomen: Omentum and abdominal cavity free from fat; intestines empty. Liver extends 6.5 cm. below the ribs; deeply congested; passive; weighs 1,400 grams. Gall bladder moderately full. Appendix: Nine cm. in length; extends downward into the pelvis; no adhesions; has meso-appendix. Mesenteric glands not enlarged. Stomach empty. Pericardium adherent, universally so. There is absolutely no pericardial cavity. Condition of long standing. Right ventricle dialated and full of blood clots; left contracted, with the usual fibrinous clots. Valves intact. Weighs 240 grams. Not a particle of fat on it. Right lung: Generally adherent; practically all of it is in a state of red or gray hepatization; a small portion at the base in front is good; weighs 2,140 grams. Left lung: Some adhesions to pleura, and some hypostatic congestion of posterior portion; otherwise normal. Spleen small and dry; 110 grams. There is an entire absence of peri-renal fat; all renals normal. Right kidney weighs 120 grams; left kidney 130 grams; both slightly congested. Bladder empty. Pancreas normal, and weighs 95 grams.

H. R. C.
M. K. G.

Acute lobar pneumonia.

R. K. B.; age, 51; nativity, England; admitted to United States Marine Hospital, Stapleton, N. Y., March 30, 1901; died April 2, 1901. Height, 5 feet 10 inches; weight, 150 pounds.

Family history.—Negative, except that most of his relatives were healthy.

Previous history.—Has enjoyed good health most of his life. Had gonorrhea and penile sores long ago, but no syphilitic trouble. Has had occasional attacks of malaria in the tropics. Present trouble commenced about nine days ago with pain in the right side of the chest, and feverishness. Had no chill; had been sleeping in a cold and damp place; has kept about, although feeling very weak and short of breath. Only two days ago began to cough and expectorate blood-stained sputum; has slept poorly and been slightly delirious. Examination: Patient presents the appearance of being seriously ill; breathing rapid and labored; pulse rapid, although strong and regular. On the right side, especially posteriorly, are the signs of pulmonary consolidation; dullness, bronchial breathing, bronchophony and increased fremitus. In some areas there are still some crepitant râles. Rough friction sounds are also present. The left lung is fairly clear, the breath-sounds being merely exaggerated. Heart sounds are loud and clear. No enlargement of the spleen or liver could be demonstrated. Abdomen not distended or tender. Sputum mucopurulent with a rusty tinge.

Course of disease.—March 31, pain on the right side of the chest persists. Breathing rapid. Coughs occasionally, raising rust-colored sputum. Pulse continues to be strong, although rapid. Pneumonia jacket applied, purgative given, aromatic spirits of ammonia administered. Temperature, 38.6 C.

April 1.—Is in a stuporous condition, but takes liquid nourishment and medicines. Groans at each respiration. Unconscious evacuation of the bladder and bowels. Stools liquid and light yellow. Pulse still of fair quality. Abdomen flabby. Moist râles audible in left lung. Peptonized milk and whisky given.

April 2.—Completely unconscious. Pulse now commencing to fail. Respirations, 40 per minute. Temperature, 38.2. Grew progressively worse and died at 12.15 p. m. without regaining consciousness.

Necropsy (twenty-six hours after death).—Body of a male, aged apparently 55 years, in rather poor state of nutrition, though muscular. Rigor mortis and post-mortem lividity present. Pupils equally and moderately dilated. Corneæ glazed. On incision, subcutaneous fat found to be small in quantity, skeletal muscles dark colored, ossification of costal cartilages advanced. Anterior mediastinum presents no abnormalities. Pericardium contains a moderately increased amount of clear serum, but its serous surface is smooth throughout. Heart: Opened *in situ*, its ventricles found to contain dark-fluid blood and chicken-fat clot, and to be in a state of moderate dilation. The mitral orifice admits only the tips of two fingers, the tricuspid three easily. On removal of the heart the pulmonary and aortic valves are found competent by the hydrostatic test. The flaps of the aortic valve are thickened and rough. At the left extremity of the mitral valve is found a large calcareous deposit which narrows the orifice. No fresh vegetations were discovered. Other valves normal. Myocardium fairly firm. Wall of left ventricle, 1 cm. thick; that of right ventricle, 5 mm. Heart weighs 380 grams. Left pleural cavity free from adhesions except at one place on the diaphragmatic surface, and contains no abnormal quantity of serum. Left lung: On its removal a considerable amount of yellow pus escaped from the bronchi. Lung floats and crepitates. On section considerable congestion is found, a little pus escapes from divided bronchial radicles. A scar of old formation is found at the base of the lung. Weight, 450 grams. Right pleural cavity presents many fresh, soft adhesions. Right lung in a state of red hepatization throughout. Small amount of pus in bronchioles. Weight, 1,550 grams. Bronchial glands enlarged. Omentum contains a scanty amount of fat. Spleen enlarged, its pulp friable, weighs 425 grams. Left kidney weighs 280 grams. Capsule adheres only at old scars, of which there are a few on the surface. Sectioned surface is pale, of yellowish cast. Cortex rather narrow and its markings blurred. Right kidney weighs 220 grams. Capsule strips readily. Stellate petechial markings on surface. Cut surface resembles that of left kidney. Cellular tissue about kidneys œdematous. Bladder contains a few ounces of urine. Stomach and intestines slightly distended with gas. Appendix long; contains soft yellow material in small amount. Mesenteric glands not enlarged. Pancreas present no abnormality. Liver, large; weighs 2,400 grams. Small hemorrhagic infarct on surface of left lobe. Its cut surface is slightly pale and yellowish in hue. Gall bladder about one-third full. No bile could be squeezed through the duct, although no obstruction was visible. Brain and spinal cord not examined.

A. M. S.
P. H. B.

Acute lobar pneumonia.

D. H. (colored); age, 38; nativity, Kentucky; admitted to United States Marine Hospital, Louisville, Ky., February 23, 1901, at 11.30 a. m., and died at 6.30 p. m. the same day.

History.—Was in an unconscious condition when admitted and never regained consciousness; temperature, 39.40 C.; pulse, 160; very hard to count; the right lung consolidated; left, free; respiration, 40 to 45 per minute; very shallow.

Autopsy (twenty hours after death).—A negro, medium size, spare, fairly well nourished. Thorax: Pericardium contains 75 c.c. clear fluid. Heart in diastole, the coronary veins distended with blood, as are the auricles and ventricles. The right ventricle contains a large white clot. Weight of heart, 900 grams. The right lung is covered by a recent, soft, fibrinous exudate, and is entirely consolidated save for a small area at the base. The consolidation consists of gray hepatization above and red hepatization below. Weight of right lung, 1,300 grams. The left lung is engorged with blood, not adherent and not consolidated. It weighs 600 grams. Abdomen: The liver is enlarged and congested, and weighs 2,500 grams. The gall bladder was empty. Vermiform appendix, large, free, has meso-appendix, points upward and across the brim of the pelvis. The other organs were not examined.

H. R. C.
M. K. G.

Influenza; lobar pneumonia; myocarditis.

T. L.; age, 32 years; native of Kansas; admitted to the United States Marine Hospital, Cairo, Ill., January 10, 1901; died January 22, 1901.

History.—This patient had a chill five days ago, and has had chilly sensations since then at various times. He complains of pains in back and limbs, particularly in kneejoints, but there is no swelling of latter. Complains also of anorexia, nausea, and vomiting. Has temperature of 40.4 C. Says he has no pain about chest. Has headache. He notices particularly an overpowering sense of weakness. Given calomel in "broken doses," followed by saline. Ordered sodii benzoas .31 gm. q. 3 h. On evening of January 11 his face was flushed, respiration increased, pulse accelerated, full, and strong. Short cough, sputum blood stained. No râles audible. Given small doses of aconite and belladonna with spts. ætheris nitrosi during the night. Has had no chill since admission. More marked evidence of pneumonia on morning of January 12. Upper and middle lobe of right lung involved. No valvular lesion of heart; no pericarditis. Quality, rate, and rhythm of pulse out of proportion to lung involvement. Heart laboring unduly. Myocardium probably acutely inflamed. ℞ tinct. digitalis .62 cc. q. 3 h. ℞ pulv. opii .06 gm. at bedtime. Flaxseed poultice over heart, renewed q. 3 h. day and night.

January 14.—Pulse 138; weak, irregular, and intermittent. Slept but little. ℞ morphinæ sulphas .01 gm. at bedtime instead of pulv. opii.

January 15.—Pulse 88 this morning; stronger, more regular; still intermittent, although less often than heretofore. Digitalis discontinued and strychninæ sulph. ordered, that there may be benefit from respiratory as well as cardiac stimulation.

January 16.—Pneumonia crisis passed. Temperature normal this morning. Pulse 86–93 all day. ℞ podophyllum resin .015 gm. at one dose. ℞ malt extract 16 cc. t. i. d.

January 17.—Feels very comfortable. Doing nicely. Expectorant ordered.

January 19.—Pulmonary condition now of secondary importance. Strychnine is discontinued and tinct. digitalis ordered again, .48 cc. q. 3 h., that heart muscles may have as much rest as possible. Has been feeling very well all day.

January 20.—Constipated. ℞ pulvis effervescens compositus, ss Sig. a dose, repeated after an hour if necessary. Result satisfactory.

January 22.—Temperature normal and pulse improved last two days. Was feeling and looking well and comfortable at morning sick call. Shortly after noon became much worse; pulse and respiration accelerated; dyspnœa marked; face anxious; temperature elevated slightly. ℞ strychninæ sulphas .003, spiritus frumenti 20, M. Sig. at one dose, at once. Symptoms of distress abated after this and patient slept the remainder of afternoon. At night sick call appeared to be resting comfortably. Medical officer who saw him at that time did not anticipate a serious outcome. Patient died suddenly at 10.35 p. m.

Necropsy (*sixteen hours after death*).—The body is that of a large, well-developed, adult white male. Superior aspect of body unusually pale, dependent portions seat of post-mortem lividity. Rigor mortis well marked. No strictures of urethra. Congenital phimosis. Superficial layer of abdominal fat 1 cm. thick. Thickness of abdominal wall 3 cm. No abnormalities of anterior mediastinum. Free fluid in pericardial sac. Superficial cardiac vessels engorged. No adhesions of pericardium. Weight of heart, 496 grams. On section myocardium is bright red. Antemortem clots in right auricle and ventricle. Thickness of wall of left ventricle, 2 cm.; of right ventricle, 0.75 cm. Right lung: Weight, 1,023 grams; dimensions, 22 by 17 by 6 cm. Adhesions anteriorly and posteriorly, recent. Free fluid at base. On section upper lobe gray, middle lobe dark red, lower lobe normal. Two upper lobes consolidated. Pigmentary deposits over surface of both lungs. Left lung: Weight, 587 grams: dimensions, 21 by 14 by 4.5 cm. This lung collapsed. No pleuritic adhesions. Normal. Opening the abdomen, superficial appearance of the organs is normal. Gall bladder moderately distended; contains no calculi. Liver weighs 2,976 grams; dimensions are 27 by 24 by 8 cm. On section somewhat pale; otherwise normal. Spleen weighs 372 grams; dimensions, 16.5 by 9.5 by 4 cm; dark red; friable. Small supernumerary spleen found. Omentum normal. Left kidney weighs 248 grams: dimensions, 12 by 6 by 4 cm.; on section is passively congested. Right kidney weighs 249 grams: dimensions, 12 by 6 by 3.5 cm.; similar condition to left kidney. The entire mesentery is seat of fatty degeneration. Transverse and descending colon imperfectly developed; appear infantile. Several anatomical constrictions throughout small intestines; lumen narrowed, but nowhere occluded. Appendix normal. Bladder contains small amount urine. Rectum contains feces. Brain not examined. Other organs normal.

A. F.
J. M. H.

Pneumonia, lobar

D. R.; age, 49; nativity, Tennessee: admitted to United States Marine Hospital, Memphis, Tenn., January 23, 1901; died January 26, 1901.

History.—For many years patient has suffered periodically from asthma, and had been admitted to this hospital six or seven times during the past three years for this trouble. He states he underwent an operation for abscess of the liver in the Marine Hospital at Cincinnati several years ago and made a good recovery. Large scar in right hypochondriac region supports his statement. On admission he stated he had a severe chill on the day preceding, followed by pain in left side and spitting of blood. He presented the usual signs and symptoms of lobar pneumonia in left lower lobe, followed in a day or two by its extension to lower right lobe. Temperature, 39.2.

Necropsy (*twenty hours after death*).—Rigor marked; body well nourished; skull very thin, the surface of parietal lobes on each side of great longitudinal fissure the seat of a lepto-meningitis with adhesions of membranes, injection of veins, and a considerable collection of straw-colored serum in subarachnoid space; weight, 1,390 grams. Left lung: Weight, 620 grams; lower lobe hepatized (red); upper, emphysematous; bronchial tubes of both lungs much thickened and in spots calcareous. Right lung: Weight, 960 grams; lower lobe hepatized: upper and middle, emphysematous; pleuritic adhesions over both lungs. Heart fatty and slightly enlarged; weight, 380 grams; walls of right ventricle thickened; chicken-fat clots in right heart; post-mortem clots in left; valves normal. Liver: Weight, 1,680 grams; normal in appearance; no cicatricial spot marking the site of an old abscess could be discovered, but the under surface of diaphragm was firmly adhered to upper surface of right lobe of liver throughout. A portion of anterior extremity of ninth rib had been removed (at the time, no doubt, of the operation for abscess of liver). From the above post-mortem condition it is probable that the diagnosis of abscess of liver for which the operation was performed was an error, and in its place there existed a circumscribed peritonitis, which was drained with success. Kidneys normal; weight of right, 170 grams; left, 180 grams. Spleen normal; weight, 125 grams.

G. M. M.

Lobar pneumonia.

R. T.; age, 26 years; nativity, Tennessee; admitted to United States Marine Hospital, Memphis, Tenn., April 1, 1901; died April 6, 1901.

History.—Was exposed in rain all day on March 30; on 31st had severe chill, followed by fever, pain in left side, cough, and expectoration of blood-streaked sputum; some diarrhea; no appetite. On full inspiration sharp pain in left side; dullness on percussion over left lung, with bronchial breathing. Was troubled with hiccough almost from beginning of attack, which was difficult to relieve.

Necropsy (sixteen hours after death).—Body well nourished; post-mortem rigidity. Veins of meninges of brain dilated and filled with blood, and membranes adherent along both sides of great longitudinal fissure. Weight, 1,260 grams. Left lung: Weight, 1,800 grams; pleuritic adhesions firm both to chest wall and diaphragm; lung in stage of commencing gray hepatization. Right lung: Weight, 590 grams; hypostatic congestion posteriorly. Liver normal; weight, 1,800 grams. Heart: Large chicken-fat clots in all cavities, especially large on right side; weight, 350 grams. Spleen normal; weight, 240 grams. Pancreas normal; weight, 60 grams. Right kidney normal; weight, 190 grams; left, weight, 170 grams.

G. M. M.

J. T. (negro); age, 23 years; nativity, Pennsylvania; admitted to marine ward, Mercy Hospital, Pittsburg, Pa., May 18, 1901; died May 23, 1901.

History.—Patient was taken from his boarding house to the hospital in the ambulance. Stated that he had been sick for four days. Sickness followed a severe "cold," beginning with a chill and accompanied by a severe cough, with pain in the right side of chest. On admission to the hospital his temperature was 40° C., his pulse 125 per minute and very feeble, his respiration 52 per minute. Both lungs gave a dull percussion note all over, tactile and vocal fremetus being greatly increased. Bronchial breathing was marked over each lung anteriorly and posteriorly. Under powerful stimulation his condition improved, the respiratory rate being reduced by the third day to 28 per minute; pulse, 100 per minute, stronger and fuller. Temperature then 38° C. This improvement continued for a day, when the temperature rose, and with it the respiratory and pulse rate. Patient became weaker and weaker, dying at 7 a. m. May 23, 1901. At no time did he complain of pain in his abdomen or of diarrhea. His bowels were moved regularly, and there was no abdominal tenderness when first examined.

Necropsy (nine hours after death).—Body that of a man 1.8 meters tall; weight about 72 kilograms. There is no post-mortem lividity, nor is rigor mortis well developed. Muscular development poor. Very little subcutaneous fat. Both pleural cavities are obliterated by recent adhesions. The right lung weighs 1,200 grams. It feels hard throughout and on section looks like beefsteak, blood oozing. The left lung weighs 1,120 grams. It is not quite so solid as is the right, but is infiltrated with pus about its base. The apex is slightly crepitant. Both lungs sink in water. Heart the size of patient's closed fist. It is stopped in diastole. Valves competent. The liver is slightly enlarged and congested, as is the spleen. The kidneys, pancreas, bladder, and brain present nothing worthy of note. The vermiform appendix is whitish, atrophied, flattened. It is 8 cm. long, and on section its walls are extremely thin, the lumen barely admitting the head of a pin. In the ileum, about 10 inches from its union with the cæcum, is seen a retrograde intussusception fully 3 inches in extent. The intestine at that point seems to be completely obstructed. There is no inflammation or ulceration of the intestines involved. There is no fecal concretion at this point, nor is there any accumulation of feces in the jejunum or upper ileum.

R. C. C.

Influenza; pneumonia, lobar.

G. M.; age, 56; nativity, New York; admitted to the United States Marine Hospital, Boston, Mass., January 16, 1901; died February 3, 1901, at 1.30 p. m.

History.—On entrance patient complained of cold which he had had for three weeks; within past few days had been suffering with pain in limbs, headache, cough, and slight chills. Temperature afternoon of admission was 38° C. Examination revealed an occasional dry râle over chest anteriorly, with slight cough. A diagnosis of influenza was made. Within twenty-four hours patient's temperature was normal and ranged between 36.6° C. and 37° C. until January 22, when it showed slight rise. Pains in limbs disappeared and cough was slight. On the evening of January 22 there was noticed a rise in his temperature of .2° C., and on the morning of January 23 an examination revealed slight dullness and crepitant râles over the base of the right lung posteriorly. From this date dullness increased. Patient complained of little pain, but suffered with dyspnœa. Temperature ranged from 37.4° C. to 39.6° C. until January 29, when it began to decline, and on January 31 was 36.8° C. On February 1 and 2 patient had severe attacks of singultus, which were slightly relieved by the administration of drop doses of amyl nitrite in sugar. Cardiac stimulants were administered from the beginning of the symptoms of pneumonia. On the evening of February 2 patient's condition became serious, increased dyspnœa, and he was unable to eliminate secretion from lungs. Oxygen was administered, but with little benefit, and patient's condition gradually grew worse, and death closed the scene February 3, 1901, at 1.30 p. m. On January 25 an examination of patient's sputum was made which showed the presence of pneumococci and the diplococci of Fraenkel.

Necropsy (twenty-four hours after death).—External appearance: Body well nourished. Rigor mortis marked; post-mortem lividity slight; small amount of subcutaneous fat. Brain, weight 1,430 grams; membranes and brain substance congested; the velum interpositum was highly congested. Thoracic cavity: Right lung, weight 1,010 grams, was bound down to thorax all around by dense adhesions; lower and middle lobes were in a condition of red hepatization; upper lobes slightly congested, and at apex was a tubercular scar 3 cm. in diameter; entire lung just floats. Left lung, weight 480 grams, was emphysematous throughout, and at apex there was found an old tubercular scar 1 cm. in diameter; no adhesions to thorax. Heart: weight, 370 grams; right and left ventricles filled with a chicken-fat clot; heart slightly fatty; valves normal. Pericardial sac and fluid normal. Liver: weight, 1,600 grams; capsule nonadherent; is slightly congested. Gall bladder contained 20 c. c. of bile and was normal. Right kidney normal; weight, 190 grams; suprarenal capsule normal; weight, 59 grams. Left kidney pale and anæmic; weight, 200 grams; suprarenal capsule not found. Spleen: weight, 110 grams; capsule nonadherent; is pale and anæmic. Bladder contains 5 c. c. of urine; walls are 1 cm. thick; the mucous membrane thickened and congested. External organs of generation normal. Stomach normal. Large and small intestines normal, distended with gas, but empty of solid matter.

F. I.

Pleuro-pneumonia.

J. J. (colored); age, 46 years; nativity, Virginia. Admitted to the marine ward of St. Vincent de Paul Hospital, Norfolk, Va., May 20, 1901; died May 31, 1901.

History.—Family history, negative. Patient had yellow fever sixteen years ago; since then his health has been good. Saturday (16th instant) he was seized with slight chilliness and a sharp pain in right side, opposite nipple, in axillary line. This occurred at sea. The following Monday the vessel arrived at this port, when he applied to the master for a master's certificate and permission to consult the marine surgeon. This was refused, and he was kept on board the vessel, under the master's medical advice and treatment. However, on the following Thursday his condition became more serious, when he was handed a certificate of service and advised to go to the marine hospital for further treatment. On admission, pain in right side is severe and continuous; there is moderate cough, with frothy blood-tinged sputum, but, owing to pain, it is partially suppressed; the respirations are shallow and rapid; tongue furred, slightly reddened at tip and edges; bowels constipated; temperature 40° C.; pulse 128; respirations 36.

Physical examination.—Less expansion on the affected side; friction fremitus on palpation; percussion reveals dullness over lower right lobe of lung. Auscultation: A harsh to-and-fro friction rub, with fine crepitant râles at the end of forced inspiration.

May 21.—Patient passed a restless night. Pain in side continuous and is aggravated by cough. There is slight dyspnœa. Microscopically, the sputum contains red blood corpuscles and pus corpuscles; no diplococci found. The urine is scant, high colored, and slightly albuminous.

May 23.—Condition improved this morning. Cough easier and pain in side considerably diminished. Probably a pseudo-crisis, since temperature has dropped to 38° C., pulse 104, and respiration 22.

May 24.—Patient again very restless and complains of thirst; dyspnœa more marked; cough is short and frequent, which makes the patient wince and hold his side; area of dullness extending upward and laterally. A hypodermic needle inserted in seventh interspace, axillary line, gave negative result. No râles can be heard over affected area, and the respirations are tubular.

May 26.—Patient slightly delirious last night and is very restless this morning.

May 28.—Dullness now extends over the entire right lung. Temperature, 38 C., pulse 136, and respirations 40. The heart sounds are loud and clear. The second sound over the pulmonary artery is accentuated.

May 29.—No improvement since last note.

May 30.—Temperature 39° C., pulse 128, weak and dicrotic; respirations 48. Patient died 5.30 a. m., May 31.

Necropsy (*eight hours after death*).—Height, 1.78 meters. Post-mortem lividity not apparent (negro); rigor mortis marked. General nourishment good; a well-developed, muscular man. Pupils slightly dilated. Heart: Weight after opening, 380 grams; valves competent, otherwise normal. Pericardial sac normal, contains normal fluid. Left ventricle contains firm coagula. The right chambers are distended with firm, tenacious coagula, which extend into the vessels. Nares, larynx, and trachea normal. Lungs: Left, weight 600 grams, normal; pleural cavity normal; right, weight 1,920 grams. The entire lung is consolidated. The tissue is reddish-brown color, firm and airless. On section the surface is dry, friable, and granular; pleural cavity contains a small quantity of blood-stained serum, and is adherent to chest wall laterally. Gastro-intestinal tract: Tongue, pharynx, and œsophagus normal. Stomach contains coagulated milk. The mucous membrane is gray in color, with points of ecchymosis. The walls are somewhat thickened and the rugæ prominent and enlarged. Pylorus and cardiac orifice normal. Small and large intestines distended with gas; rectum normal. Liver is enlarged and somewhat sclerosed; color, light brown; weight 3,250 grams. Gall bladder and ducts normal. Pancreas, weight 60 grams. The gland is somewhat firmer than normal; probably an overgrowth of the fibrous tissues. Kidneys: Left, weight 153 grams; and right, weight 152 grams. Both kidneys congested. Pelvis and ureters normal. Bladder, urethra, and prostate normal. Suprarenal bodies: Left, weight 4.5 grams; right, weight 4.5 grams; color, reddish-yellow. Spleen, weight 175 grams, normal. Scalp and skull normal. Membranes of brain and the brain normal. Brain, weight 1,424 grams. Other organs not examined. Microscopical examination made of specimens from lung, liver, kidney, and pancreas (by C. R. G.). The lung showed its alveoli filled with an exudate of epithelial cells and fibrin. The lung tissue can scarcely be demonstrated. No pneumococci were found with Gram stain. The kidney: The epithelium of many of the tubules was desquamated; the tubules filled with granular detritus. In several places we find heaps of round, inflammatory cells. The blood vessels are engorged. The liver shows collection of inflammatory cells around vessels. There is a slight increase of connective tissue. The pancreas shows some increase of connective tissue.

J. B. S.

Pneumonia; purulent pericarditis.

M. H. S.; age, 34; nativity, United States; occupation, oysterman; admitted to United States Marine Hospital, Baltimore, Md., March 8, 1901; died March 16, 1901.

Family and personal history negative. Present illness started March 6 with stitch-like pain at the lower border of ribs on left side. Aggravated by deep inspiration; then followed a feeling of chilliness and slight cough. This condition continued until patient was admitted to hospital, although feeling gradually worse each day.

Physical examination.—General condition apparently good. Expansion of chest on left side was diminished somewhat. Auscultation shows a slight bronchial breathing and a to-and-fro friction rub at lower border of left lung. Temperature 39° C.; pulse 92; respirations, 40. On March 13 the patient had a profuse perspiration, followed by a fall in temperature from 39.2° to 36.8°. Succeeding this the patient complained of intense pain over left chest; the pulse immediately became weaker, and three hours later the temperature was 38.6°, with delirium marked. March 12 the patient has signs of consolidation in lower portion of left lung; the following day the expectoration was rusty. On the 14th the pulse was very weak, the respiration more shallow, and the delirium worse. Temperature then went to 41.2° C., but was reduced by several sponge baths, which also seemed to better the general condition slightly. March 16 the patient became continually weaker, and death occurred at 8 o'clock.

Necropsy (*six hours after death*).—Height, 5 feet 10 inches. General nourishment good. Pupils equal and slightly dilated. Post-mortem lividity and rigor mortis marked. Heart: Weight, 285 grams; anæmic; all valves competent. Pericardial sac thickened; contained 200 c. c. purulent fluid. Nares, larynx, and trachea normal. Lungs: Left, weight 1,235 grams. Whole lung presented signs of an extreme degree of red hepatization. Right, weight 730 grams. Shows hypostatic congestion. Left pleural cavity contained 200 c. c. of serous fluid. Pleua. adherent to diaphragm. Right pleura normal. Abdominal contents normral Liver, 2,800 grams; pale, hard, and resistant to touch and knife. Kidneys: Left, weight 250 grams; capsule, cortex, and pyramids normal. Right, weight 260 grams; normal; ureters and bladder normal. Spleen, weight 260 grams; rather pale and anæmic. Meninges normal. Brain, weight 1,910 grams; normal except for slight congestion of superficial vessels. Other organs normal.

W. C. B.
B. W. B.

PLEURO-PNEUMONIA AND ENDOCARDITIS FOLLOWING OPERATION.

Death from embolism of left cerebral artery.

W. D.; age 43; American.

History.—Applied for treatment of a right inguinal hernia, oblique, on March 21, 1901. Examination showed a well-descended hernia of five years' standing, a loop of small intestine filling the sac. It was painful on pressure and could not be retained by ordinary apparatus. Since the man was otherwise of fine physique and requested the radical operation, he was admitted to the marine division, Buffalo Hospital, Sisters of Charity, prepared, and the operation done under chloroform on March 23. A modified Halstead operation was done, the cord finally emerging from a new internal ring formed through the transversalis and internal oblique, and resting upon the latter muscle beneath the external oblique instead of directly beneath the skin. Kangaroo tendon was used throughout. Reaction was good and on the third day light diet allowed. On the fourth day, at the morning visit, a flush was noticed of the cheeks and the chart showed a temperature of 38° C.; the pulse registered 100. His sputum cup contained a little colored muco-purulent sputum. There was pain in the right chest. Physical examination gave an almost linear pleuritic area along the mid-axillary line between the fourth and sixth ribs; there was marked inhibition of breathing, and throughout the middle right lobe there was consolidation. The sputum gave large numbers of pneumococci. Appropriate treatment resulted on the twelfth day in a normal temperature and pulse. The heart action, which had required a stimulant during the pneumonic period, became improved, and the man placed upon a general tonic. Resolution was progressing favorably, when at 5 a. m. of the 8th of April he suddenly called for aid and in a few moments was dead.

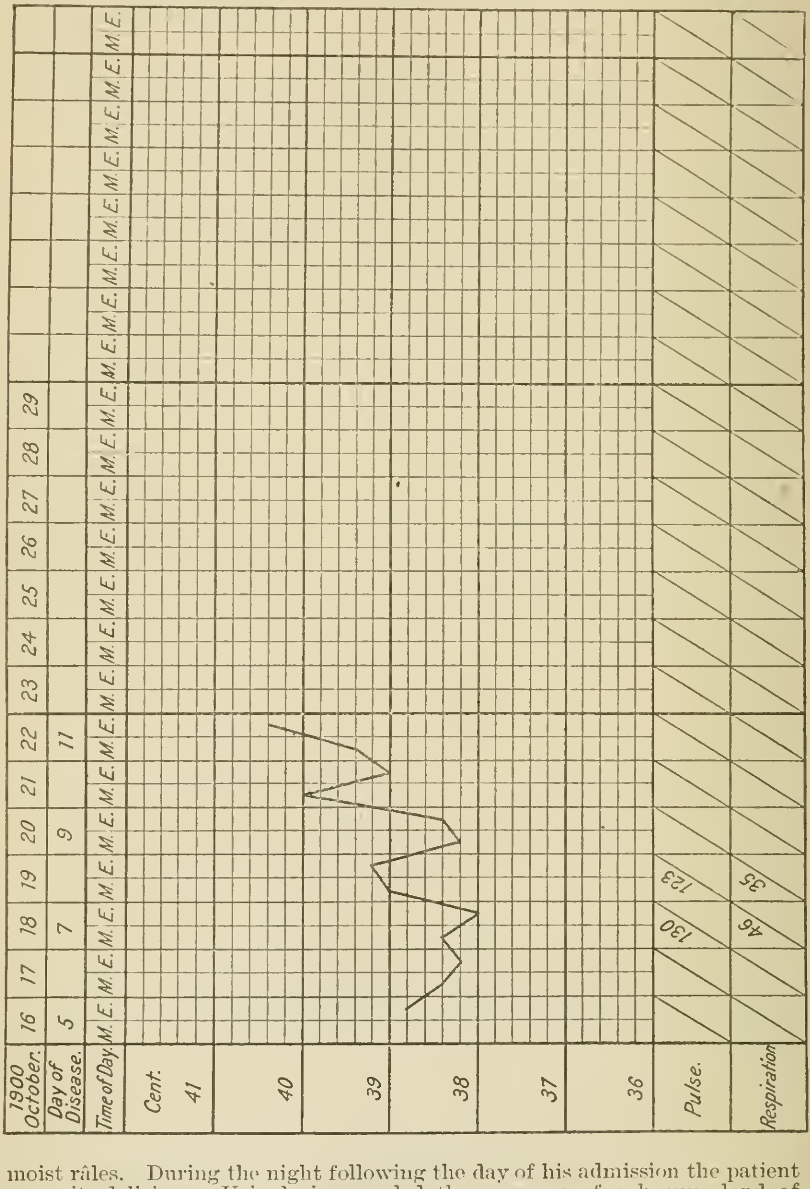
Necropsy (*six hours after death*).—Body of an adult of middle age. There is some rigor mortis. In right inguinal region there is a recently and firmly healed linear scar. On removing the anterior chest wall the right pleura is found with increased fluid and adherent over a small area, which corresponds with the pneumonic area in middle lobe of the lung. This area is still consolidated, but resolution is quite evident: some portions sinking in water bath, others floating. The pericardial fluid is normal, the parietal membrane normal, the visceral inflamed, with patches of lymph. The heart muscle also is softened and the endocardium inflamed, that of the right ventricle showing numerous thickened plaques. The valve leaflets are thickened and rough. Beneath the chordæ tendineæ and intimately adherent to the columnæ corneæ on the side of the interventricular septum there is a firm ante-mortem clot, quite decolorized and fibrinous, with looser and later formed edges. The pneumococcus was present in the lobar consolidation and on the surface of the endocardium. The appearances of these heart lesions indicated that they were sharing in the general improvement from the pneumococcus invasion. death having arisen from the embolic stoppage of the left middle cerebral vessel. The seat of the hernia operation showed a strongly and perfectly healed wound, there being no indication whatever of any connection between the healed hernial incision and the invasion of the pneumococcus.

E. W.

Pneumonia, lobar, double; chronic Bright's disease; alcoholism.

C. K.; age, 42 years; nativity, Norway; was admitted to the United States Marine Hospital, port of San Francisco, Cal., October 16, and died October 22. 1900, at 7.30 p. m.

History.—The patient's illness began four or five days prior to his entrance into the hospital, and was ushered in by a preliminary chill. Following this came urgent dyspnœa and a sharp stabbing pain in the left hypochondrium, which was greatly augmented by each inspiration and expiration. In a few hours there set in a painful, suppressed cough, which was accompanied by scanty, blood-stained expectoration. The first sputa examined showed the characteristic rusty tinge of pneumonia, and were so viscid that their container could be inverted without spilling them. Physical examination revealed dullness over the base of both lungs, posteriorly, with bronchial breathing and crepitant and sometimes sonorous



U. S. Marine Hospital, port of San Francisco, Cal.
Name, C. K.; age, 42 years; disease, pneumonia, lobar.

and moist râles. During the night following the day of his admission the patient became quite delirious. Urinalysis revealed the presence of a heavy cloud of albumen upon boiling, and the microscope showed a large number of hyaline and coarsely granular casts. The urine was also quite scanty in amount. Despite all treatment, the physical signs became more marked; the patient sank deeper into his delirium, and the urine still continued scanty. Treatment consisted of free stimulation with whisky, strychnine, local applications, and food. On the 21st of October his temperature was 40° C. and he had lapsed into stupor. The next day he was comatose; his breathing became labored and irregular (at intervals ceasing entirely), and at 7.30 p. m. he died.

Necropsy (*fifteen hours after death*).—Body of a well-developed. well-nourished adult white male—1.65 meters height, weight 73 kilos. Rigor mortis and cadaveric lividity well marked. This latter is especially noticeable over the penis and scrotum. There is no œdema of lower extremities. The skin appears about normal. except about the umbilicus, where there are ante-mortem. subcutaneous hemorrhages, varying from one-half to three-fourths of a centimeter in diameter. The abdomen is markedly distended with gas. The subcutaneous lymphatic glands are not enlarged, nor are there scars on the penis. The mucous membranes are pale. The skeletal muscles. subcutaneous fat. and costal cartilages appear normal. On removing the sternum no anterior mediastinal emphysema is present; but there is a walled-off. purulent effusion in a cavity extending from the second to the sixth rib on the right side and from the mid-sternal to the mid-axillary line. The cavity contains 300 c. c. of purulent fluid. Its walls are quite thick, but of recent origin, as shown by its easy stripping and fresh lymph. More posteriorly there is another cavity containing about 200 c. c. of purulent fluid, which extends posteriorly down to the posterior attachment of the diaphragm and upward to the third rib. The right lung weighs 1,070 grams. It is covered, anteriorly and laterally, with acute pleuritic inflammation. The glands at the root of the lung are enlarged. friable, and very dark colored. The bronchial tubes contain frothy mucus. The lung posteriorly is in a state of red hepatization, is quite solid, and does not crepitate. except at the extreme base. This consolidation extends inward for about 4 cm.; going forward it becomes more congested and emphysematous. At the apex of the right lung is a casseo-calcareous tubercle. Left lung: Weight 1.380 grams: posteriorly consolidated, but in a more advanced stage than the right lung. but on section there exudes a bloody and somewhat muco-purulent fluid. The consolidation extends 6 cm. inward. This lung borders on gray hepatization. The apex is very markedly œdematous. and on the border between the areas of œdema and consolidation is a beginning abscess which is on a level with a thick. pleural exudate on the posterior surface. This abscess is about 5 cm. in diameter. It is connected and its walls formed by the interlobar pleura. Advancing inward. the œdema takes the place of the consolidation. No tubercles are appreciable at the apex. The left pleural cavity is similar in all respects to the right. The heart is normal. The abdominal viscera are in the normal position. The intestines are markedly distended with gas. and are covered by a moderately fat great omentum. The appendix vermiformis is normal and about 15 cm. long. Right kidney: Weight 225 grams. Pale in color. On section the kidney substance cuts with noticeable resistance. Surface is dry. Markings distinct. The interpyramidal cortex is gray and quite distinct. Pelvis of kidney and ureter normal. Left kidney presents the same appearance. The relative thickness of the cortex and medulla is about 1 to 10. The cut surface is noticeable by the grayness of the cortex and a purulent fluid in the pelvis of the ureter. The ureters are normal. Liver: Weight 2.855 grams; enlarged cut surface is normal; surface is moist. pale, and quite brittle. Spleen: Weight 415 grams; large and congested; size, 15.5 by 13.5 by 5 cm. Upon its anterior surface there is an oval scar, 2.5 cm., confined to the capsule and very tough. but surface is moist malpighian bodies are large. Pancreas: Weight 110 grams; 28 cm. long: normal. Stomach: Somewhat enlarged; on its anterior surface has several submucous hemorrhages evidently of recent origin; 1.87 meters from the pylorus there is an intussusception (involving 26 cm. of the gut), which is also of recent ante-mortal origin. Bladder and prostate normal. Thoracic and abdominal vessels normal. Intestines: At the seat of the intussusception there are no adhesions. There is simply congestion of the mucosa of the jejunum. There is also present a duodenitis. Brain: Dura mater is injected. The anterior two-thirds of the cerebral hemispheres are in a state of acute meningitis. Posteriorly the pia is markedly congested over the left hemisphere. and there is on the posterior surface of the left hemisphere a subpial hemorrhage. The exudation is sero-purulent in the subdural space, but around the cerebellum is quite purulent and extends even to the base of the brain and upper part of the spinal cord. On the lower posterior part of the right lobe of the cerebellum is a patch of coagulated fibrin. Spinal cord slightly injected. otherwise normal save at its upper end. Cause of death, double purulent pleuro-pneumonia. purulent cerebro-meningitis complicated by chronic Bright's disease, and alcoholism.

M. E. L.
M. J. W.
J. M. G.

Chronic colitis: arterio-fibrosis: pneumonia, acute lobar.

C. P.; age, 40; nativity, Norway; last employed on schooner *John C. Beacham*. Admitted to United States Marine Hospital, Stapleton, Staten Island, August 16, 1900; died November 14, 1900.

Family history.—Negative.

Past history.—When 18 years of age was ill for six months. Complained then of pain in stomach, which was relieved by eating, of anexoria, emesis, etc. Eight years ago, while in New York, had remittent fever and has had two or three attacks of malaria since. Had rheumatism, gonorrhœa, and hard chancre.

Present history.—Has been sailing along the coast of Florida for many years. For past two years had suffered with pains in stomach, which became so severe and were accompanied by such general weakness that he left his vessel July 3 of present year and has been ashore since. Pain becomes intensified three or four hours after eating, is sharp and cramp-like in character, and is usually accompanied with desire to go to stool. Although at times constipated, as a rule has diarrhea, the stools being fluid, small in amount, and are not attended with any tenesmus. Passes slight amount of blood at times. Has eructations of gas and acid food. On exertion suffers from dyspnœa, vertigo, and headaches.

Physical examination.—General condition poor, is anæmic and emaciated. Chest negative. Abdomen flaccid. On palpation considerable gurgling and tenderness elicited. Tenderness most marked along the transverse colon, especially in the epigastric region, where a tumefaction may be mapped out which is movable upward and downward and transmits the aortic impulse. On auscultation over this mass a bruit is heard; on displacing mass from aorta an impulse or bruit made out. The superficial arteries show advanced atheromatus changes. Treatment: Milk diet, intestinal antiseptics, and astringents. Temperature on admission, 39.2; respirations, 28; pulse, 96.

October 20, 1900.—General condition not improved. Has lost considerable flesh. Diarrhea persists. Stools fluid, small in amount, of greenish color, and fetid. Temperature and abdominal symptoms much the same. Appetite good. Temperature became normal the third day after admission and remained so for five or six days afterwards. Has been complaining of cough and has muco-purulent expectoration. Examination of lungs shows dry stage of bronchitis. Has been receiving increasing doses of potassium iodide, but they have been discontinued. Given spray of wine of ipecac and water.

October 22, 1900.—Had chill at 11 p. m., followed by fever; temperature going up to 40.6; pulse 96; respirations 20. Given quinine sulphate 0.6 t. i. d.

October 24.—Temperature normal yesterday; pulse 92; respirations 20; diarrhea same. Coughs considerably, with free muco-purulent expectoration. Is very weak. Has pain in right side of chest, especially when coughing.

October 26.—Temperature to-day and yesterday ranged around 38.5; pulse from 100 to 120; respirations around 25. Coughs considerably, especially during the night. Nitroglycerin 0.0006 every two hours. Codeine sulphate 0.24; sirup hydriodic acid 20; water to make 100. Signa, 5 c. c. every four hours and suppositories of opium, iodoform, and tannic acid.

November 5, 1900.—General condition much worse, more emaciated, nervous, and anæmic. Diarrhea lessened somewhat. Cramp-like pains and tenderness not so severe. Tumefaction in abdomen lessened apparently. Coughs considerably, expectorating considerably, expectorations being bronchorrheal in character. Examination of lung shows consolidation over right side. Temperature ranges from normal to 38.5.

November 13, 1900.—Condition much worse. Has been receiving stimulation constantly. Diarrhea about the same as last noted. Cough still troublesome, with profuse expectorations.

November 14, 1900.—Despite increased stimulation he gradually sank, pulmonary œdema setting in, and he died at 9.55 p. m.

Necropsy (sixteen hours after death).—Body of a male, aged about 40 years. Considerably emaciated. Rigor mortis fairly marked. Slight suggillations in dependent portions. Eyes glazed. Pupils moderately dilated. Anterior mediastinum normal. Thymus not found. Pericardium in normal position; contains about 25 c. c. of clear, straw-colored serum. Walls smooth and glistening. Heart: Left ventricle arrested in systole; right contains slight amount of fluid blood and some clotted blood. Right auricle contains considerable clotted blood, as does pulmonary artery. Aortic valve competent to water test. Some calcareous deposits at bases of valve flaps. Mitral orifice admits two and one-half fingers. Valve edges considerably thickened with calcareous deposits. Heart muscle about normal in thickness, color, and consistency. Endocardium normal. Heart weighs 260 grams. Pleural cavities: Surface smooth and glistening, with one or two adhesions to lung. Left lung: Floats and crepitates and cut section shows lower lobe markedly congested and with profuse serous exudate. Bronchial mucous membrane thickened and covered with mucopurulent exudate. Lung weighs 830 grams. Right lung: Lower lobe consolidated, hard, has appearance of great hepatization; does not float or crepitate. Great vessels of thorax, and especially the aorta, show calcareous deposits. Omentum normal. Spleen: Normal in size and position. External appearance normal, weight 150 grams. Left kidney: Normal position, capsule nonadherent; cut section shows medullary bodies of fibrous appearance and cortex yellowish; weight 215 grams. Right kidney: Position normal; findings resemble those in left, but abnormalities are not as marked; weight 160 grams. Suprarenal capsule examined and found normal. Bladder normal. Genitals apparently normal. Rectum: Mucous membrane thickened and ulcerated. Gall-bladder duct normal. Colon: In hepatic flexure, transverse and descending colon the mucous membrane was greatly thickened and large ulcers from one-eighth to an inch in diameter were found. The axis of ulcers were longitudinal with the bowel. The mucous membrane was softened and the natural corrugations were absent. The liver cuts easily, fair consistency, mahogany color, and shows considerable fatty infiltration; weighs 1,830 grams. Pancreas normal, weight 30 grams.

J. M. K.
G. W. S.

Rheumatic fever; influenza; acute lobar pneumonia.

D. G.; age, 60 years; nativity, Maine.; admitted to the United States Marine Hospital, Stapleton, N. Y., December 22, 1900; died December 31, 1900.

History.—Says he had the "break-bone fever" in the South, and that after arriving in this city he suffered from chills and fever, headache, pains in the bones and muscles, diarrhea, etc. Stayed at hotel in city until December 22, when he was brought to hospital in ambulance. Arrived in hospital in stuporous condition, put to bed immediately; temperature 37, pulse 96 and of good quality, respiration 25. Physical examination shows patient to be of large frame, about 6 feet high, weighing about 250 pounds. Heart and lungs negative, and abdomen showed no signs of note. Left shoulder and right wrist are swollen and painful. Information is with difficulty obtained from him, as he is quite deaf and stuporous. Says he feels as he did when he had dengue. Has been drinking heavily and is nervous and tremulous. No albumen or sugar in urine. Treatment: Put to bed, given milk diet, cathartics, and salicylate of soda.

December 24.—Slept most of the time since admission. Temperature yesterday ranged from 37.6 to 38. To-day it stays at 38. Pulse 96, respiration 24. Pain in joints much relieved. Salicylates continued and sol. piperazine, 1 gram to 1,000 c. c. of water, prescribed. Bowels active; passes considerable amount of urine.

December 26.—Sleeps most of the time. Temperature remains about 38; pulse around 96; respirations 24; bowels and kidneys active; pains much relieved; last night was restless and delirious. Given quinine 0.6 t. i. d.

December 27.—Abdomen tender and tympanitic; pulse fair quality; temperature 37.6; bowels active; takes liquid food; swelling and pains in joints gone: salicylates discontinued.

December 28.—Temperature rose to 39 this morning and reached 40 in the evening; given bath and temperature was reduced to 38. Tongue coated; bowels moved to-day; abdomen still tender. Prescribed calomel 0.06 t. i. d. and dil. hydrochloric acid gtts. 15 t. i. d. At 4 p. m. had severe chill, followed by sweat, and great pain in the head and limbs. Has slight coryza and cough. Given quinine, phenacetine, salicin, caffeine in small repeated doses. Temperature ranged from 38 to 39.

December 30.—Temperature remained about 38 during day; pulse about 90 and of fair volume; respiration about 24; was restless and delirious last night; bowels moved three times; headache, pains in limbs, and coryza relieved some. Medicines ordered yesterday stopped.

December 31.—About 8 a. m. became much worse, respirations became somewhat stertorous in character, about thirty-two times to the minute: is stupid and roused only with great difficulty; pulse fair; abdomen very tympanitic. Temperature 38.8; pupils equal and react to light and accommodation. No paralysis. Bowels active, but feces hard and lumpy. Passed urine in bed. Given mag. sulph., 15 grams; enema, hot pack, and after it he became much better. Became conscious, respirations quieted down, and he said he felt well; 5 p. m.

took change for the worse, pulmonary œdema set in, and despite stimulation he rapidly grew worse, and he died at 6.30 p. m.

Necropsy (*twenty-one hours after death*).—Rigor mortis well developed, postmortem suggillations marked, pupils moderately and evenly dilated. Large amount of subcutaneous fat. Anterior mediastinum contains fat. Pericardium normal in appearance and contents. Heart: Left ventricle arrested in systole and empty; right arrested in diastole and contains clotted blood. Valves and great vessels show no abnormalities. Heart muscle fairly firm; considerable deposit of fat on surface; weight 550 grams. Left pleura: Surfaces united by one large fibrous adhesion at base of lung. Right pleura: Many adhesions on diaphragmatic and parietal surfaces. Left lung: Weight 1,440 grams; upper lobe in condition of red hepatization; lower lobe congested and œdematous. Right lung: Weight 900 grams; all lobes congested and œdematous, especially the lowest one. Omentum contains much fat. Spleen: Weight 140 grams; presents no gross abnormality. Left kidney: Capsule strips easily. Two large cysts and several smaller ones visible externally. Cut section shows indistinct markings, grayish appearance of cortex and medullary bodies. Right kidney: Weight 295 grams; resembles left in findings. Bladder contracted; mucous membrane congested and roughened. Rectum, stomach, duodenum, and intestines are negative. Liver: Weight 2,950 grams; tissue friable; cut section has a yellowish appearance. Brain not examined, as friends claimed body.

J. M. K.
G. W. S.

Pneumonia, lobar.

J. K.; male; white; age, 56 years; admitted to United States Marine Hospital, Detroit, January 20, 1901; died January 24, 1901.

History.—The patient, a fireman on the U. S. revenue cutter *Fessenden*, although he had been a hard worker and a hard drinker, had never previously suffered from any severe sickness. His family history could not be ascertained. On the evening of January 19, after being exposed to the cold on deck for two hours, he was suddenly seized with nausea and vomiting. He had no recollection of a chill. He retired to his bunk, feeling very dizzy and feverish, and in a few hours became distressed with a severe pain in the left infra mammary region, which was much aggravated by a dry, hacking cough. The next morning he was removed to the hospital in the ambulance. His temperature was then 39° C., pulse 118, hard and bounding; his cheeks were red and flushed, facies showed expression of anxiety and apprehension; tongue white and furred; cough was pronounced and sputum abundant, frothy, and tinged with red. On percussion dullness was elicited over left lower lobe, and hyperresonance over right lung and remainder of left. Auscultation revealed numerous fine râles in lower left lobe, with exaggerated and prolonged respiratory sounds over balance of both lungs. Examination of the sputum showed Fraenkel's pneumococcus, numerous streptococci and staphylococci, together with structural elements. Not much change in the patient's condition was noted until the morning of the 22d, when signs of œdema of the lungs were manifest; respiration became rapid and labored, while the pulse continued at the same rate (118), but weaker. On the evening of the 23d he was bled, 250 c. c. of blood being withdrawn, after which he showed some apparent improvement until 3 a. m. of the 24th, when pulse and respiration rapidly failed, he became cyanosed, and at 5 a. m. died.

Necropsy (*twenty-six hours after death*).—Body that of a well-nourished man, about 60 years of age. Rigor mortis pronounced. Head rather small. Pupils dilated. Calvarium removed; dura mater apparently normal, no evidence of serous effusion; sinuses distended. Brain normal; weight 1,290 grams. Thorax opened. Pericardium not thickened, contained 15 c. c. of bloody fluid; a number of roughened areas on parietal surface. The surface of the right ventricle showed numerous spots of ecchymosis. In both cavities of the heart were large, very firm, ante-mortem clots, entangled in the chordae tendinæ and involving the auriculo ventricular valves. Aortic and pulmonary valves were competent. A few roughened spots of endarteritis in aorta. The left lung was adherent at base and to pericardium, the lower lobe solidified and in a condition of red hepatization; the upper lobe crepitant, though much congested, with extensive organized fibrinous effusion posteriorly; weight 980 grams. The right lung was bound to walls by old adhesions over entire surface, except a small space posteriorly. Both lungs were œdematous and showed very marked anthracosis. The bronchial glands enlarged on both sides. Liver normal; weight 1,990 grams. Gall bladder empty; duct patulous. Spleen firmly adherent to diaphragm; normal on section; weight 500 grams. Right kidney normal; weight 140 grams. Left kidney embedded in oblong mass of fat 25 cm. in length by 15 cm. in diameter; structures prominent and showed some hemorrhage on section; weight 170 grams. The remainder of the abdominal organs were normal.

E. K. S.
J. G.

Broncho-pneumonia.

W. J.; age, 58 years; nativity, Norway; admitted to marine ward of St. Vincent de Paul Hospital, Norfolk, Va., December 19. 1900; died January 17, 1901.

History.—Family history, negative. Patient has been a sailor since boyhood. About twice a year he would "spree," but never used liquor habitually to excess. His health has always been good up to a year ago, when he had pneumonia, and since then he suffered several severe attacks of bronchitis.

Eight days ago he contracted a "cold," accompanied by cough, with scanty expectoration and considerable prostration. On admission: Temperature, 37.1° C.; pulse, 94, irregular; tongue, clean; bowels, regular.

Physical examination.—Inspection gives negative result. Percussion note is generally clear, with small area of slight dullness in right axillary line. Auscultation reveals a feeble respiration and a few sonorous râles are heard here and there. Heart action diffused impulse; the first sound is short and valvular, but no murmur can be heard. Examination of fauces and larynx negative.

December 23.—Patient passed a very restless night. Looks pale, and complains of feeling weak. Temperature this a. m., 38.4° C.; pulse, 112. Cough more troublesome and worse at night, accompanied by free expectoration of muco-purulent material, yellowish white in color.

December 30.—No improvement in patient's condition since last note. Cough worse at night and in early morning, associated with a very copious expectoration. The sputum is muco-purulent and sometimes offensive; no tubercle bacilli have been found in sputa. There is slight dyspnœa and anorexia and a sense of soreness behind the sternum.

January 7.—Cough, dyspnœa, and copious expectoration continue. Percussion shows no apparent change, except, perhaps, a slight localized tympany over right lateral thorax. On auscultation a few mucous râles are heard.

January 14.—Patient very pale and growing weaker. Cough, with profuse muco-purulent expectoration, persists; anorexia and occasional vomiting; there is dyspnœa, scanty urine, and a feeble, irregular pulse; heart sounds weak, and area of dullness increased, especially laterally.

January 16.—Patient very weak. Sonorous râles heard over both lungs and also moist râles over lower lobe of right lung. Extremities cold and clammy. Face and neck becoming cyanosed. Temperature 36° C.; pulse feeble—120. Death occurred at 5.10 a. m. on the 17th.

Necropsy (thirty hours after death).—External appearances: Body of well-built white man, fairly well nourished; height 5 feet 7 inches; post-mortem lividity slight; rigor mortis marked; pupils normal. Heart: Weight after opening, 900 grams. Dilatation and hypertrophy of both ventricles—the left most marked, the "*cor bovinum*," or ox heart, and fatty degeneration, the muscles being pale and soft. Pericardial sac normal, contains 60 c. c. of clear straw-colored fluid. Aortic and mitral valves show slight retraction of the segments and contain calcareous deposits; other valves competent. There is circumscribed dilatation of the whole circumference of the arch of aorta; other arteries and veins normal. Respiratory organs: Nares, larynx, and trachea, normal. Lungs: Left, weight 1,125 grams It is somewhat mottled in appearance, having slightly depressed and firmer bluish-black areas here and there. On section the surface is redder than normal, with an exudation of a frothy muco-purulent material. The bronchioles are slightly dilated, with signs of surrounding inflammation. Pleural cavity: Slight adhesions to chest wall in axillary line, no effusion. Right lung: Weight 1,250 grams. External appearance similar to left lung. On section the upper and middle lobes exuded a frothy muco-purulent material; the lower lobe is congested with a sero-sangineous exudate from bronchioles. Pleural cavity normal. Abdominal contents: Peritoneum normal. Gastro-intestinal tract: Tongue, pharynx, œsophagus, stomach, and intestines, normal. Liver is diminished in size, light brown in color, and somewhat granular on section: capsule easily detached. The left lobe is darker in color and firmer than the right: weight, 1,850 grams. Gall bladder normal contains small amount of bile and no concretions. Gall ducts normal. Pancreas, weight 68 grams; normal. Genito-urinary organs: Kidneys, left, weight 350 grams, is somewhat congested, but otherwise normal. Right, weight 360 grams, congested. Spleen, weight 350 grams, slightly enlarged, color normal. Bladder normal. Suprarenal capsules normal. Left: Weight 4 grams; right, weight 4.5 grams. Other viscera normal. Brain not examined.

J. B. S.

Pneumonia, lobar.

J. H.; age, 50 years; nativity, New York; admitted to the United States Marine Hospital, Stapleton, Staten Island, August 16, 1900; died August 16, 1900.

History.—Patient entered hospital *in extremis.* Impossible to get history from him.

Physical examination.—General appearance that of an alcoholic; percussion of chest reveals absolute flatness of entire right lung from apex to base; right side of chest contracted and only transmitted sounds heard. Left lung: Percussion note hyper-resonant; auscultation reveals sonorous and subcrepitant râles. Heart: The sounds of the heart obliterated by the aggravated breath sounds of the left lung; apex beat displaced downward. Skin: There is a red eruption thickly distributed upon the arms, shoulders, and chest, and less so on the abdomen; isolated, macular spots about the size of a pin head and do not form patches, sharply defined edges, disappear on pressure and quickly regain their color. Inguinal glands not enlarged; no scar on penis.

Sputum examination: Thick, frothy, tenacious in character and the color of brick dust or prune juice; diplococci of pneumonia found in large quantities; also other bacteria. Treatment: Stimulation by nitroglycerine, digitaline, and whisky. Died suddenly.

Necropsy (*eighteen hours after death*).—Body, male, apparently well nourished, about 5 feet 6 inches in height, weight 140 pounds. Rigor mortis marked. Hypostasis lower part of body marked. Subcutaneous fat abundant. Right lung: Bound down by numerous adhesions to costal wall and diaphragm, the upper and middle lobes in a state of beginning resolution and gray hepatization; lower lobe engorged; cut surface shows frothy exudate. Weight of lung, 2,100 grams. Left lung: Apex slightly adherent to costal wall, old adhesions extending from apex to diaphragm posteriorly, lung being smaller than the average, weighing 520 grams, lobes being bound by adhesions indicating a previous pneumonia. Heart: Removed and opened; stopped in diastole, most marked on left side; calcareous deposits on tricuspid valves; other valves normal. Weight 350 grams. Diaphragm: In normal position. Liver, normal, weighs 1,950 grams. Gall bladder, distended with bile, contained one calculus about the size of a robin's egg, adherent to duodenum. Right kidney in normal position, weight 200 grams, and normal in character. Left kidney normal, weight 250 grams. Spleen greatly congested and bound down by adhesions. Intestines greatly distended with gas. Brain normal.

T. C.
G. W. S.

Pneumonia.

P. E.; age, 30; native of England; admitted to the marine ward of the German Hospital, Philadelphia, Pa., July 30, 1900, died July 31, 1900.

History.—Had been ill five days with fever, pain in chest, and cough. Upon physical examination the entire right lung was found to be consolidated. The left lung presented evidence of an acute bronchitis. The pulse was rapid and weak, and the general condition of the patient was very bad. Despite vigorous treatment he grew steadily worse and died within twenty-four hours of his admission to the hospital.

Necropsy (*ten hours after death*).—The body is that of a well developed, well nourished adult white male. Rigor mortis is present to a slight degree. There is no œdema. There are adhesions at the base of both lungs. The right lung is throughout in a condition of gray hepatization, the cut surfaces exuding a grayish purulent fluid. The left lung is congested, the walls of the bronchii are inflamed and scattered throughout the lung; there are small areas of consolidation. The heart and pericardium are normal. The intestinal tract is normal. The kidneys are in a condition of acute parenchymatous inflammation. The right kidney weighs 165 grams, the left 154 grams. The rest of the genito-urinary tract is normal. The spleen is slightly increased in size, and weighs 240 grams. The pancreas is normal. The brain and spinal cord were not examined.

H. S. M.

Valvular disease of the heart, aortic obstruction.

A. E. C.; age, 43 years; nativity, Sweden; was admitted to the United States Marine Hospital, San Francisco, Cal., October 26, and died October 27, 1900.

History.—The patient was transferred to this hospital from the City and County Hospital, San Francisco, Cal. On his arrival he was not in his right mind and little history could be elicited. From a friend of his it was ascertained that his illness was of two weeks' duration and had begun with fever and great weakness. Examination revealed that he was quite irrational and seemed to be suffering from great pain in his abdomen. He lay in bed with legs drawn up and would scream at the slightest touch. His temperature was 36° C., and his pulse was 80, quite full and regular. His respirations were not rapid. Auscultation revealed a systolic murmur over the apex and the aortic orifice, apparently louder at the apex, which was situated low down in the sixth interspace, about 2.5 cm. outside of the left mammillary line. There were no signs of broken compensation, the heart beats being slow, full, and strong. Morphine 0.015 gm. was administered, in order to quiet him so that further examination could be made, but did not accomplish that result. A moderate dose of magnesium sulphate was also exhibited. The patient was noisy all night, and at 8.45 a. m. the next day he died, a small stream of blood trickling from his mouth at the very end.

Necropsy (*twenty-six hours after death*).—Body that of an adult white male, about 1.70 meters in height; fairly well developed, but poorly nourished. Postmortem rigidity and lividity are both fairly well marked. On the nose is a recent wound, involving only the skin, and from the nostrils and mouth there have trickeled small streams of blood. Pressure on the chest causes frothy blood to exude from the mouth. In the skin covering the shins there are white oval scars. There is some œdema of the penis and scrotum, but none of the legs. No evidence of violence exists other than already mentioned. The subcutaneous lymph glands are not apparently enlarged. On anterior section, the skin, subcutaneous tissue, skeletal muscles, and costal cartilages appear normal. On opening the abdomen, the intestines are found to be moderately distended with gas. The omentum is much injected, but does not show any evidence of inflammation. From the abdominal cavity there escapes an odor of garlic. The anterior mediastinal glands are enlarged. The pleural cavities are normal. The heart weighs 330 grams. It is very small. The left ventricle is firmly contracted. The cardiac veins are noticeably injected. The left ventricle wall is very thick. The aortic orifice is about normal in diameter, but two of the valves are adherent. Upon the most posterior is a large calcareous growth. The heart muscle is dark brown in color. The right lung weighs 670 grams. It is markedly œdematous. Posteriorly, is a hypostatic congestion. The left lung weighs 573 grams. The lower lobe is in a state of splenization. It is also somewhat œdematous. The bronchial glands of both lungs are enlarged. They are tubercular. At the root of the right lung there is a large calcified gland. The omentum is studded with small, white, firm bodies, apparently of recent origin. The liver weighs 3,505 grams. It is large, and dark in color, being very much congested. It cuts easily; otherwise it is normal. The gall bladder is very much distended with black bile. The gall duct is narrowed at its entrance into the duodenum by an old inflammation. The lymph glands at the porta of the liver are enlarged. The left kidney weighs 205 grams and is practically normal. The right kidney weighs 185 grams and gives evidence of acute nephritis. The spleen weighs 307 grams. It is quite large, and on the outer end there are four or five areas of necrosis. The pulp is purplish brown in color and semifluid in consistency. The pancreas is normal. The brain weighs 1,445 grams. It shows a slight deposit of lymph on the superior surface of the right cerebral hemisphere. The choroid plexuses are dropsical. Otherwise the brain is normal. The sinuses of the skull are much congested. The stomach is normal in size. Its contents are those of ordinary digestion. The inner posterior surface is much congested, and the entire mucosa shows a chronic inflammation, which extends throughout the small intestine. The solitary follicles of the ileum are somewhat enlarged, presenting small, white points. No Peyer's patches or ulcerations are visible. The mucosa is injected. The bladder is very greatly distended with urine. The prostate gland is not enlarged. All the lymphatic glands in the abdominal and thoracic cavities are found to be enlarged.

Death probably due to depression, resulting from the trip to the hospital, his heart being in bad condition.

Microscopic report.—Heart muscle: The cells are small, their transverse striations being barely visible. All the cells are loaded with fine brown granular pigment. The interfibrillar capillaries are not injected. The branches of the coronary arteries and veins show no abnormality. Kidneys: At regular intervals, immediately beneath the capsule (which does not present a wavy appearance), are small areas in which there are collections of connective tissue cells and lymphocytes. In some of these areas there is already overgrowth of the connective tissue fibers, with resulting atrophy of the parenchyma. The Malpighian bodies vary greatly in size. Their glomeruli are slightly shrunken and their capsules are slightly thickened. The parenchyma is somewhat granular and cloudy, otherwise normal. Liver: This organ shows some stagnation of blood in the center of its lobules. The cells, especially those surrounding the intralobular veins, are heavily loaded with fine brown granular pigment. There is visible also a tendency to lymphocytic aggregation around the periphery of the lobules. The bile ducts are normal. Lungs: The septa are normal and show no hyperæmia. The alveoli are filled with desquamated epithelium and lymphocytes, also a few polymorphonuclears. In some there is evidence of coagulated fluid.

M. E. L.
M. J. W.
J. M. G.

Chronic Bright's disease, lobar pneumonia, and rheumatism.

M. S.: age, 47: nativity, Germany: admitted to United States Marine Hospital, Stapleton, Staten Island, July 5, 1900; died August 11, 1900.

Family history.—Mother died of hemorrhage of the lungs while young. Father died of old age.

Previous history.—Usual diseases of childhood. At Alexandria, Egypt, about twenty years ago, had typhoid fever. Had rheumatism in Australia nearly twenty years ago, and has been affected with it off and on ever since. Smokes and drinks.

Present history.—Ten days ago began to have dyspnœa, cough, muco-purulent expectoration, pain in chest, and œdema of feet. Has acute articular rheumatism, affecting at present the right foot and right shoulder.

Physical examination.—General nutrition poor, conjunctivæ jaundiced, tongue coated yellowish, anæmic appearance, feet œdematous, chest expansion about equal, breathing dyspnœic. Slight dullness over right apex. Respiratory murmur harsh, mucous râles heard over both lungs. Fremitus exaggerated on both sides. Liver and spleen not palpaple. Passes about 1,200 c. c. of turbid urine, containing about 0.4 per cent of albumen, pus cells, and numerous bacteria. Urine is voided with difficulty, and on examination a deep perineal stricture is found.

Treatment.—Confined to bed. Milk diet. Prescription of ammo. chloridi, ammo. carb., aa. 7.5 gm.; mist. glycyrrhizæ comp., ad 100. M., sig., 5 c. c. every 4 hours. Give also sodii salicylatis, 1 gm., q. 3 hours. Apply to inflamed joints equal parts of ol. gaultheriæ, spts. vini rect., and lin. chloroformis on lint covered by oiled silk.

July 12.—No dyspnœa. Right elbow painfully swollen and red. Other joints better. Apply liniment to elbow. Give inf. digitalis, 15 c. c., t. i. d. Bowels inactive. Give mag. sulph., 15 g. Coughs considerably; appetite poor.

July 15.—No marked improvement. Cough medicine stopped. Ordered equal parts of wine of ipecac and water as spray, to be inhaled. Teeth in very poor condition. Gums swollen and ulcerated. Foul odor from mouth. To use mouth wash of 25 per cent solution euthymol.

July 17.—Cough and expectoration less. Appetite poor. Vomited this a. m. Passes about 1,200 c. c. of highly albuminous urine daily. Condition of gums not improved. Chlorate of potash and tr. myrrh swabbed over gums. All internal medication stopped.

July 24.—Condition much worse. Dyspnœa marked for past 24 hours. Unable to urinate for past 3 days. Had to be catheterized with silver catheter. Stricture almost occludes urethra. Prescription: Strych. sulph., 0.04; caffein cit., 4; tr. strophanthus, 10; aquæ, ad 100 c. c. M., sig.: 5 c. c., t. i. d. Substitute for present mouth wash, sol. permanganate of potash, 1–5000.

July 26.—Milk pancreatinized, but vomiting continues. Rheumatism continues, but is much better. Submaxillary glands swollen and tender. Catheterized daily. Mustard plaster over epigastrium, and cocaine to relieve vomiting.

July 30.—Rheumatism in left wrist and ankle worse since last night. Mouth about the same. Can retain milk pretty well. Stop permanganate mouth wash. Use as mouth wash acid salicylic, 4; tinct. cinchona co., 50; aquæ, ad. 200. M., filter. Paint wrist and knee with iodine.

August 4.—Dyspnœa distressing. Had a chill this morning. Temperature 39. Vomited. Headache. Now urinates voluntarily. Bowels active. Friction sounds over right side of chest. Stop present medication. Feed per rectum with predigested food.

August 6.—Dyspnœa marked. Consolidation of lower lobe of right lung. Temperature remains around 38–39. Rusty colored sputum containing the diplococcus pneumoniæ.

August 7.—Both lower lobes consolidated, Mucous râles over upper lobes. Heart regular, 78–90 beats per minute. Marked dyspnœa. Urine more scanty. Vomiting stopped. Give strych. sulph., 0.002, q. 4 hours, alternating with nitroglycerin, 0.001, q. 4 hours.

August 10.—Considerable improvement for past two days. Dyspnœa less marked, pulse soft and regular. Takes some milk by mouth. Very little pain. Cough less. Temperature normal for past two days.

August 11.—Heart began to fail last night and despite stimulation he died at 6 a. m.

Necropsy (*eight and one-half hours after death*).—Body that of a male apparently 50 years of age. General nutrition poor. Appears anæmic. Rigor mortis fairly developed. Suggillations in dependent portions of body. Skullcap and brain case normal and of average size. Sinuses and blood vessels congested. On opening membranes considerable cerebro-spinal fluid escapes. Brain weighs 1,190 grams; on section shows no gross lesions. Anterior mediastinum, some œdema in cellular tissue. Pericardium normally placed, smooth, glistening, and contains about 75 c. c. of clear serum. Heart: Opened in situ; right ventricle contains small amount of fluid blood and small chicken-fat clot, left ventricle empty; removed; aortic and pulmonary valves competent to water test, other valves normal, myocardium thin; weight of heart 280 grams. Left pleura contains about 250 c. c. of turbid fluid, surface rough and covered with fibrinous deposits; right pleura resembles left. Left lung: Upper lobe floats and crepitates; lower sinks. Upper somewhat œdematous, lower in state of red hepatization. Right lung: Adherent to pleura at apex, to diaphragm, and the lobes adherent to each other. Upper and middle lobes float and crepitate, and serous exudate flows from cut surface. Lower lobe in red hepatization. Right lung weighs 690 grams, left 740. Nerves and great vessels of chest negative. Diaphragm adherent to right lung. Omentum normal. Spleen weighs 180 grams, dark colored and friable. Left kidney: Normally placed, weighs 110 grams, small, cuts hard, capsule nonadherent, cortex narrow, pale, anæmic. Right kidney: Normally placed, weighs 100 grams, resembles left. Suprarenal capsules not examined. Ureters normal. Prostate, seminal vesicles, and testicles normal. Urethra: Stricture at neck of bladder. Pancreas normal. Liver: Normally placed, weighs 1,350 grams, cut section normal. Gall bladder and ducts normal. Small and large intestines not examined.

J. M. K.
G. W. S.

Pericarditis, Bright's disease, hepatic cirrhosis.

P. C.; male; white; age, 65 years; admitted to hospital July 9, 1900; died July 26, 1900.

History.—With the exception of the smallpox when a boy, the patient had always been well until three months before entering hospital. At that time he noticed pains in the region of the liver and kidneys. His feet and legs became swollen and œdematous; dizzy spells were frequent; breathing at times was difficult. Urine was voided frequently in small quantities.

Physical examination.—Dullness lower part of left lung; expiratory sounds prolonged; dry, sibilant râles. Heart sounds faint and muffled. Friction sounds plain. Tenderness over liver. Feet and legs swollen. Urine loaded with albumen; quantity in twenty-four hours normal. Temperature in mouth varied at different times from 34.2° C. to 35.5° C.; per rectum normal. Pulse in wrists almost imperceptible. Patient was very weak and rambling in his talk. Continued failing until he died, July 26, 1900, apparently from asthenia.

Necropsy (*five hours after death*).—Rigor mortis slight; both pupils widely dilated; post-mortem lividity marked. Calvarium removed in usual manner; dura normal; brain substance pale and anæmic; arteries at base somewhat atheromatous, did not collapse; weight, 290 grams. Thorax opened. Right lung dark and mottled, with slight anthracosis, showed marked resistance to cutting; weight, 290 grams. Left lung: Pleura adherent posteriorly. Pleural cavity contained 1,200 c. c. of serous fluid. Lung shrunken and contracted; light slate color; weight, 300 grams. Heart: Pericardium slightly thickened; cavity containing an excess of fluid. Surface of heart roughened. Both sides of heart distended with black fluid blood. Right heart normal in appearance. Left heart dilated and hypertrophied, muscular walls being soft and easily torn; chordæ tendinæ fragile; concretions around mitral and aortic valves. Weight, 575 grams. Abdomen: Cavity contained 1,275 c. c. of serous fluid; omentum thin and scanty, with no fat. Liver: Dark gray in color, "hobnailed" on surface, hard and dense to the touch, with marked resistance to cutting; right lobe very rounded and prominent. Weight, 1,080 grams. Gall bladder greatly distended with intensely black fluid. Pancreas normal. Spleen: Light gray in color; weight, 140 grams. Kidneys: Right kidney hard and dense; several hard papillary eminences on surface. Cortical substance dark-red color, containing a number of cavities about 1 cm. in diameter, and containing a clear serous fluid; medullary portion was of a dirty yellow color. Weight, 190 grams. Left kidney same in appearance as right. Weight, 200 grams. Left suprarenal capsule firmly adherent. Ureters normal. Bladder distended with urine.

B. D. P.
J. G.

Chronic bronchitis, with abscess of lung.

E. G.; white; age, 50; nativity, Canada; admitted to the United States Marine Hospital, Baltimore, Md., June 22, 1900; died July 16, 1900. Diagnosis, chronic bronchitis.

Family history.—Negative.

Personal history.—Moderate drinker; has had mumps, scarlet fever, diphtheria, chicken pox, and liver trouble. Has had a cough for the last sixteen years. Has lost flesh rapidly in the last week previous to entrance to hospital; says he has had spells of weakness which come on him suddenly and leave him almost helpless. Condition of patient on admission not good; bowels loose; persistent paroxysmal cough; expectoration fibrinous, and expelled with difficulty. On inspection emaciation was marked; auscultation revealed large moist râles. Temperature when admitted 39.6°. Microscopical examination of sputum revealed the presence of streptococci, staphylococci, and diplococci in large numbers. Patient gradually grew weaker, suffering a great deal from violent paroxysms of coughing, and died July 16 at 6.10 a. m.

Necropsy (nine hours after death).—Post-mortem lividity present in dependent parts; rigor mortis well marked; general nourishment poor; pupils irregular. Heart weighed 325 grams and was normal. Left lung adherent anteriorly and posteriorly; patches of consolidation in apex; small abscess at base; air cells filled with purulent matter; weighed 800 grams. Right lung adherent at apex; entire organ showed hypostatic congestion, with areas of consolidation at base; weighed 860 grams. Liver weighed 1,008 grams and was normal. Left kidney weighed 185 grams and showed evidences of septic emboli; right kidney weighed 170 grams and was normal. Spleen weighed 205 grams and was normal. Calvarium removed; brain and membranes normal; weight of brain, 1,375 grams.

M. W. G.
G. P.

Acute pleurisy; chronic anæmia.

T. W.; age, 51 years; nativity, New York; admitted to the United States Marine Hospital, New York (Stapleton), N. Y., June 7, 1900, and died July 9, 1900. Chief complaint, malaria.

Previous history.—Has had chills and fever several times; had chancres once. Present illness began four weeks ago with a chill, followed by fever and headache.

Physical examination.—Well nourished and developed; face and body is jaundiced; conjunctivæ are pale; ankles œdematous; heart, lungs, liver, and spleen are negative.

Treatment.—Patient was put on a pill of iron, arsenic et strychnia, t. i. d.

July 6.—Blood examination shows absence of leucocytosis, absence of plasmodium malariæ, and absence of nucleated red blood corpuscles.

July 7.—Patient can walk to closet, but shows marked dyspnœa. There is dullness at base of right lung.

July 8.—Patient is confined to bed with shortness of breath.

July 9.—Death.

Necropsy (twenty-four hours after death).—Body that of male, white, aged about 50 years. Slight œdema of ankles and scrotum; marked pallor of lips, conjunctivæ, and face; fat well retained; no jaundice perceptible. Calvarium removed; sinuses, vessels, brain, bones, and membranes negative. Anterior mediastinum negative. Remains of thymus gland negative. Pericardium contains about 75 c. c. of straw-colored fluid. Pericardium apparently normal. Heart: Weight, 400 grams; valves apparently normal; "chicken-fat" clots in aortic and pulmonary artery. Left pleura negative. Left lung: Weight, 540 grams; normal. Right pleura: Marked adhesions between lower lobe of lung and parietal wall and diaphragm. Right lung: Weight, 690 grams; lower lobe is greatly congested and œdematous, and adherent to diaphragm and parietal chest wall. Aorta and inferior cava negative. Spleen: Weight, 210 grams; congested; normal in appearance. Right kidney: Weight, 154 grams; substance apparently normal. Left kidney: Weight, 140 grams; negative. Pancreas negative. Stomach somewhat dilated. Duodenum and jejunum: The mucous membrane is stained dark. It was carefully examined for presence of anchylostomum duodenale, but none were found. Peritoneum negative. Liver: Weight, 1,500 grams; surface is lobulated like a congenitally deformed organ; the depressions between the elevations seem to send bands of connective tissue into the liver substance. The liver substance apparently normal. Genitals: Scrotum is slightly œdematous. Urethra negative.

E. F.
G. W. S.

Ulceration of duodenum, perforating; acute peritonitis, general.

C. C.; age, 32 years; nativity, China; admitted to United States Marine Hospital, Stapleton, N. Y., July 4, and died July 6, 1900.

Impossible to obtain previous history. Took sick yesterday morning with pain in chest and abdomen; tried to vomit, but could not do so; ate a large quantity of strawberries and cherries last night.

Physical examination.—Negative.

July 4.—Pain and tenderness are not localized at any special part of abdomen, but are general and intense. The abdominal wall is very rigid, but not distended. There is no localized tumor mass perceptible. At 2 p. m. gave enema of 1 quart of warm water; bowels did not move; 4 p. m. gave calomel, grs. 5; 9.30 p. m., gave mag. sulph. oz. 1; 11 p. m. patient had a liquid stool of about 8 ounces. It contained a dark sediment.

July 5.—Patient had a very restless night; complained of pain over entire abdomen; vomited stomach contents, but its odor is not fecal. Pleuritic friction sounds heard at base of left lung, anteriorly. ℞. Spts. frumenti oz. ½, every 3 hours. Blood examination shows 11,500 leucocytes.

July 6.—Patient has pain and tenderness over entire abdomen. There is no localized tumor or tenderness. Pulse is hardly perceptible. There is no vomiting. Patient prepared for an exploratory laparotomy, but died during the process of sterilization in the ward. No operation was done.

Necropsy (four hours after death).—Body that of a male Chinaman; age, about 30 years; height, 5 feet; weight, 115 pounds; black hair and eyes. No evidence of external violence. Post-mortem discoloration well marked; post-mortem rigidity marked; anterior mediastinum normal; remains of thymus gland negative; pericardium smooth, glistening; fluid in pericardium normal. Heart contains fluid blood; valves, endocardium, and muscles normal; clots in pulmonary artery and aorta; weight, 75 grams. Left pleural cavity shows no adhesions of lung. Small adhesion between diaphragm and left parietal wall. Diaphragmatic pleura roughened. Left lung weighs 510 grams; floats, crepitant; hypostatic congestion posteriorly. Right lung: Weight, 380 grams; negative except for hypostatic congestion posteriorly. Right pleura is smooth and glistening. Great vessels and nerve trunks of chest negative. Peritoneal cavity contains about 750 c. c. of turbid, serous fluid and on opening it considerable gas escaped. Peritoneum covered all over with recently formed lymph. Omentum adherent to intestines. Spleen: Weight, 100 grams. Left kidney: Weight, 115 grams; negative. Right kidney: Weight, 125 grams; negative. Suprarenal capsules negative. Ureters negative. Bladder negative. Genitalia negative. Pancreas negative. Intestines adherent to each other and to parietal peritoneum, and covered with recently formed lymph. Stomach normal. Duodenum has a perforating ulcer of funnel-shaped appearance, with base of funnel in mucous membrane; edges of ulcer indurated; tissues surrounding it have a bluish, unhealthy appearance. Ulcer is located one-half inch from pyloric orifice, on anterior surface of duodenum. The ulcer is about one-half inch in diameter internally, and about one-eighth inch in diameter where it has perforated the peritoneal coat of the duodenum. Appendix injected and covered with inflammatory lymph; mucous membrane normal. Rectum filled with formed fecal matter. Liver: Weight, 1,250 grams; surface covered with lymph; substance normal. Gall bladder and ducts normal.

E. F.
G. W. S.

TUBERCLE OF LUNGS.

J. Y.; age, 42 years; nativity, England; was admitted to the United States Marine Hospital, port of San Francisco, Cal., April 4, and died April 17, 1901.

History.—Mother dead; cause, consumption. Patient had yellow fever thirty years ago, and has had malaria. He had a cough, extreme dyspnœa, and night sweats for over a year, and had lost about 40 pounds in weight. He had some pain in chest lately. Appetite capricious; bowels quite loose; slept poorly; had a laryngeal complication and was very hoarse.

Physical examination.—Inspection: Greatly emaciated; scapulæ prominent; left scapula moved with respiration, right seems immobilized; breathing regular, abdominal, and very labored. Palpation: Vocal fremitus increased on both sides, but greater on right than left. Cardiac impulse felt in fifth interspace, just inside mammary line. Percussion: Anteriorly entire right lung dull; left lung dull down to third interspace. Posteriorly both lungs dull down to about the fifth rib. Auscultation: Coarse crepitant and subcrepitant râles heard over the upper lobe of the left lung and extending down to about the fourth rib. Over the remainder of the left lung is heard bronchial breathing. Right lung: Bubbling râles, crepitant and subcrepitant, heard over entire lung, also well-defined friction sounds. Heart: Size and position normal; no murmurs; pulse 124 per minute, of low tension and small volume. Tubercle bacilli were found in the sputum in immense numbers. He was put on an easily digestible special diet; was given sedatives for his cough, tonics, and stimulants. For a few days he showed some slight improvement, then he suddenly began growing rapidly weaker, and on April 17 died.

Necropsy (fifteen hours after death).—Body that of a fairly well-developed and nourished adult white male; weight, 55 kilograms. Rigor mortis well marked. Post-mortem lividity slight. Paniculus adiposus scanty. Abdominal viscera normal in color. Omentum scantily supplied with fat. Fat of anterior mediastinum also scanty. Pericardial cavity contains about 50 c. c. of straw-colored fluid. Heart: Weight, 385 grams; aortic and pulmonary valves support a column of water; heart muscle somewhat flabby, about normal in color and thickness. The aortic valves show a few small atheromatous patches. The other valves are normal. Pleura: The parietal and visceral layers are adherent over entire surface on both sides, entirely obliterating pleural cavities, the adhesions being much firmer on right side. Left lung: Weight, 980 grams; floats in water; upper lobe and upper third of lower entirely consolidated, the upper in various places being in a condition of coagulation necrosis, and many small cavities found in upper lobe. There are miliary tubercles scattered over the entire lung, and the lower part of lower lobe is greatly congested and œdematous. Right lung: Weight, 939 grams; very firmly adherent to the chest wall; in a condition similar to left, but further advanced. Liver: Weight, 1,780 grams; surface smooth; cut surface slightly congested; otherwise apparently normal. Gall bladder: Distended with bile; its duct patulous. Pancreas: Weight, 115 grams, apparently normal. Spleen: Weight, 200 grams; its surface shows some small dark markings, but is smooth; cut surface appears slightly congested; Malpighian corpuscles indistinct. Left kidney: Weight, 170 grams; surface smooth; capsule strips readily; medullary rays quite distinct; nothing abnormal, apparently, macroscopically. Right kidney: Weight, 150 grams; in every way similar to its fellow. Intestines: Throughout greater part of ileum is seen the shaved-beard appearance characteristic of enteric fever. Coiled in the cæcum were four ascarides lumbricoides, averaging about 14 cm. in length. Several tubercular ulcers were found in the large intestines. Stomach slightly congested; otherwise normal. Bladder quite firmly contracted; walls normal. Brain: Weight: 1,450 grams; appears quite normal.

Microscopical report.—Pericardium appears quite normal. Heart: The muscle cells and their nuclei are all well stained; the longitudinal striations are quite distinct, but the cross striations can not be seen. These is a deposit of fine brown granular material in the muscle cells. The walls of the coronary arteries appear slightly thickened. Pleura: This thickened, particularly its fibro-elastic stroma, and infiltrated with new connective tissue cells. Scattered throughout its thickness are lymphocytes, epithelioid cells, and tubercle granular matter. Here and there an occasional giant cell is seen. There is a growth of the endothelial cells of the small blood vessels. Lung: Scattered throughout the section are well-defined, well-circumscribed miliary tubercles, consisting of the usual tubercle tissue, lymphocytes, epithelioid cells, and giant cells. Many of these tubercles are in a condition of coagulation necrosis, and their centers consist of broken-down cells, granular detritus, and nuclear débris. Here and there small cavities are already formed. Some of the tubercles consist almost entirely of dense fibrous tissue, exemplifying nature's attempt to limit the disease. Liver: With low power the lobules are well marked and show some evidence of beginning cyanotic atrophy. In the section are seen several well-defined miliary tubercles, composed of lymphocytes, tubercle granular matter, epithelioid cells, and giant cells. The centers of some of these are in a condition of coagulation necrosis, and some have already broken down, forming cavities. The liver cells and their nuclei stain comparatively well, but they contain some fat globules and considerable pigment. The walls of the arteries are somewhat thickened. Kidney: Capsule appears quite normal. The medullary rays are well defined. In the labyrinth we see the Malpighian bodies. The glomeruli in most of these have shrunken away from the capsule of Bowman, and in a few have fallen entirely out. Bowman's capsule is normal. The glomerular cells, with the nuclei, are well stained and appear normal. In some places the cells of the convoluted tubules are swollen and cloudy and take the stain poorly. In some places there is a slight growth of new connective tissue. The collecting tubules are normal. Spleen: Capsule and trabeculæ are normal. The Malpighian corpuscles are quite distinct. The reticulum can be made out. The pulp cells consist of the usual lymphocytes, epithelioid cells, and connective tissue cells. There is a considerable deposit of brown pigment scattered throughout the section. Pancreas: This appears quite normal. The bodies of Langerhans appear quite distinct.

A. M. M.
J. M. G.

F. D., colored seaman; age, 24; nativity, Kentucky; admitted to the United States Marine Hospital, Cincinnati, Ohio, December 26, 1900; died February 16, 1901.

History.—Father died of tubercle of lung; other family history negative. Patient had been in good health until one month previous to his admission to this hospital, which was for gonorrhea. Since admission he had a slight cough. Physical examination on admission was absolutely negative. Sputum, though profuse, was negative. The only general symptoms were a bronchitis, a severe diarrhea, and a persistent temperature ranging from 38° to 39.5°. The chest was examined repeatedly, and about two weeks after patient's admission there was noticed an increase in voice sounds high up on right side near edge of scapula; also a slight dullness on percussion at apices, with slightly tubercular breathing on right side. The sputum then for the first time gave the tubercular reaction. From that time the patient's decline was rapid. Diarrhea continued at intervals, and at times patient had severe epistaxis. Patient died at 2 a. m. February 16, 1901.

Necropsy (*twelve hours after death*).—Body that of a medium-sized, rather dark negro. Left eye missing. Scar on left tibia and back of right hand. Abrasion on left trochanter. Rigor mortis well marked. Brain: Dura mater adherent in places, but normal in appearance. Excessive amount of cerebral fluid in arachnoid spaces. Left lateral ventricle abnormally large and filled with a thin reddish serum. Right side normal; weight, 1,332 grams. Chest: Pericardium filled with excessive amount of straw-colored serum. Heart in diastole and filled with postmortem clot, partly organized. Heart's valves normal; weight, 320 grams. Pleura somewhat thickened. Left lung studded with tubercles and adherent laterally, posteriorly, and at apex. Microscopically shows evidence of a latent tubercular process with fibroid changes, followed by an acute exacerbation, with capillary hemorrhages in several places: weight, 1,182 grams. Right lung studded with tubercles, one large cavity near the apex posteriorly, and several smaller ones, all connecting. Adhesions posteriorly and at the apex; weight, 1,582 grams. Abdomen: Mesenteric glands much enlarged. Microscopically tubercular. Stomach normal, contracted and pale. Liver: Glisson's capsule normal; liver fatty. Microscopically shows cloudy swelling, but no evidence of tuberculosis; weight, 1,725 grams. Spleen normal; weight, 249 grams. Right kidney: Size normal; capsule normal, pale, and flabby. Microscopically shows cloudy swelling, but no evidence of tuberculosis; weight, 138 grams. Left kidney: Size normal; capsule normal, pale and fatty. Microscopically shows cloudy swelling, but no evidence of tuberculosis; weight, 164 grams. Intestines small, somewhat congested, and studded with numerous ulcers, which microscopically proved to be tubercular. Appendix normal; contained ten concretions. Bladder small, normal.

R. D. M.
H. W. W.

Bright's disease—Chronic nephritis.

J. D.; age, 35 years; nativity, Pennsylvania; was admitted to the United States Marine Hospital, port of San Francisco, Cal., February 13 and died February 23, 1901.

History.—Family: Father dead; cause, tuberculosis. Mother dead; cause, tuberculosis. Four brothers died in infancy; cause unknown. Patient had pneumonia twelve years ago; had inflammation of bursa patellæ eight years ago; had gonorrhea four times; denied syphilis. Habits: Patient smoked to excess and used alcohol moderately. Patient had been troubled with cough and expectoration for about four months; had lost very little in weight, and his appetite was poor. He had been dyspnœic on exertion for about two years. About a week before entering the hospital patient had several chills, followed by sweating. The cough and expectoration became augmented and caused great pain in his left lung. The expectoration was purulent and of a very disagreeable odor. Patient had been deaf in his left ear for fifteen years, and lately had become hard of hearing in his right ear. Patient's bowels were very loose; he slept poorly, and was very weak.

Physical examination.—Palpation: Increased fremitus over right apex. Percussion: A dull note over apex of right lung. Tympanitic note over middle lobe of left lung. Auscultation: Bronchial breathing and numerous râles. From time patient entered he had profuse night sweats, vomited medicines, and rapidly grew weaker.

Treatment.—Bismuth subnitrate and Dover's powders to control bowels; strychnine and whisky as a tonic; atropine for night sweats, and codeine mixture for cough, with abundant, easily digestible nourishment. His temperature varied between 36.2° C. and 38.8° C. The tubercle bacillus, though sought for, was not found.

Necropsy (eight hours after death).—Body that of an adult white male, much emaciated, about 1.65 meters in height, and weighing about 60 kilograms. Muscular development poor. Upon the right shin there is a smooth, white scar 2 by 5 cm. in area. Rigor mortis and post-mortem lividity fairly well marked. Brain: Weight, 1,180 grams; normal. Skeletal muscles along incision anteriorly appear normal. Anterior mediastinum normal. Pericardium normal. Heart: Weight, 302 grams; normal. Right lung: Weight, 810 grams; is completely consolidated at its apex, and the upper and middle lobes are riddled with cavities and smaller abscesses. Left lung: Weight, 435 grams; is not nearly so solid and is much more œdematous. Liver: Weight, 1,660 grams; about normal in size. The right lobe is soft and rather friable. The left lobe is rather firm, due to abnormal fibrous tissue. Left kidney: Weight, 205 grams; surface mottled; large, white kidney. Right kidney: Capsule somewhat adherent, otherwise similar in all respects to left. Spleen: Weight, 255 grams; enlarged and shows evidence of old perisplenitis; somewhat congested. The other viscera are apparently normal.

A. M. M.
C. W. V.
J. M. G.

Microscopical report.—Pericardium: Atrophy of the subpericardial areolar tissue; otherwise normal. Heart muscle: Somewhat fragmentary. Cells and nuclei stain well. Cross striations discernible. Coronary arteries normal. There is a deposit of fine brown granular pigment in the cells, indicative of brown atrophy. Pleura: This is considerably thickened and infiltrated with connective tissue cells. It contains tubercle tissue throughout its substance. Its surface shows an immense deposit of fibrin, interspersed through which are granular material, epithelial cells, and lymphocytes. Lung: Almost entire section is consolidated. The vesicles are filled with epithelial cells, connective tissue, and lymphocytes. The walls of the vesicles are thickened and infiltrated with epithelial cells and lymphocytes. The bronchi are greatly thickened by new connective tissue, and are also infiltrated with epithelioid cells and lymphocytes. Many of the vesicles contain large, pale, fatty epithelial cells, with an occasional giant cell. The intima of the blood vessels is thickened and they are all distended with blood. Coal pigment is deposited in the interstitial tissue throughout the section. At various places are seen small abscesses filled with lymphocytes, degenerated epithelium, pus cells, and nuclear débris. Liver: Appears quite normal, with the exception of some pigmentation of cells. Kidneys: A few of the malpighian bodies are somewhat shrunken and show hyaline degeneration of portions of their glomeruli. Some of the cells of the convoluted tubules are swollen and pale and infiltrated with a granular material, but for the most part these are normal. The conducting tubules are normal. Spleen: The capsule appears quite normal; trabeculæ also quite normal. Reticulum: Appears somewhat thickened and infiltrated with lymphocytes and epithelioid cells. Pulp: Consists of ordinary spleen cells, lymphocytes, and epithelioid cells. There is quite a deposit of fine, dark pigment. Adventitia of arteries is somewhat thickened.

A. M. M.
C. W. V.
J. M. G.

T. B.; age, 46; colored; nativity, Missouri; admitted to the United States Marine Hospital at St. Louis, Mo., December 29, 1900; died January 1, 1901.

History.—Mother died of hemorrhage; cause of father's death unknown. He claims to have enjoyed good health until five weeks prior to admission to hospital, when he began to be troubled with shortness of breath, gradually getting worse. He lost flesh rapidly and had a severe cough, and fever at night; also noticed some blood in expectoration. When admitted to hospital he presented the following symptoms: Temperature, 36; pulse, 124, and respiration, 29. On physical examination signs of cavities were observed at apices of both lungs, while signs of consolidation existed over lower lobes of both lungs posteriorly. Tubercle bacilli abundant in sputum. Diagnosis, tubercle. Treatment, supportive.

Necropsy (six hours after death).—Height, 162 cm. Body poorly nourished. Pupils dilated. On removing calvarium, coverings of brain were found very pale; otherwise apparently normal. On opening abdomen the tissues were dry. Abdominal cavity partially filled with dirty, grayish fluid. Omentum congested and filled with tubercles. Stomach empty. Large, irregular-shaped tumor involved all of duodenum, except first third, and the pancreas. Tumor has hard, woody feel. All mesenteric glands enlarged. Spleen very friable and contains tubercles. Capsule adherent; weight, 200 grams. Left kidney weighs 170 grams. Capsule adherent. Cortex very thin. Some pus in pelvis. Tubercles around pyramids. Right kidney weighs 186 grams; otherwise same condition as left. Liver large, nutmeg appearance, very tough on section, and quite dry. Bladder empty. Upon opening thoracic cavity, organs were found adherent to each other. Pericardium contains 50 c. c. of straw-colored fluid. Heart normal in appearance; weight, 290 grams. Clots in both sides. Left lung weighs 800 grams. Anterior border of both lobes in fair condition; the rest of it is indurated and sinks in water. Small cavity at apex, the tissues are very hard around the cavity. The lung is adherent posteriorly. Right lung weighs 1,500 grams, and is almost entirely solid, except a small strip at lower posterior border. A large cavity filled with a foul-smelling pus occupies about half of upper lobe. Microscopical examination of sections from lung tissue show tubercle bacilli in abundance. Sections of tumor found in abdominal cavity, not very distinctive, consists of fibrous tissues infiltrated with round cells, probably cancer.

D. M. C.
W. G. S.

Tubercle of lung—Acute miliary tuberculosis.

C. McG.; age, 37; nativity, New York; admitted to United States Marine-Hospital, port of New York, N. Y., May 27, 1901; died May 29, 1901.

Family history.—Parents and brothers died of lung trouble.

Previous history.—Had usual diseases of childhood. Had gonorrhea, chancroids, and buboes.

Present history.—Unable to obtain a clear history of the case or to make an exhaustive examination, owing to extreme weakness of patient and also because of his disturbed mental condition. Dates his illness back six months, during which time he has had cough, with muco-purulent expectoration and occasional hæmoptysis. Suffers from dyspnœa, weakness, and night sweats; has lost considerable flesh; been drinking heavily of late; is emaciated, cyanotic; has clubbed fingers; fine, silky hair; pupils dilated; clavicles prominent; breathes rapidly and shallow. At apices of both lungs there are many fine and coarse râles, blowing breathing; conveyed voice sounds; inspiration jerky; sounds over rest of lungs feeble; heart rapid. Is very nervous and excitable. Sputum contains numerous tubercle bacilli. Temperature, 37°; pulse, 99; respirations, 34.

Treatment.—Stimulants: Whisky, strychnia, digitalis.

May 28.—Delirious, taking maniacal character—delusional. Hallucination of special senses; incoherent and irrational. Delirium set in during night. Given hyoscine 0.0006 hypodermically; much quieter toward morning; dyspnœa marked; pulse of better quality; slight diarrhea. Codeia cough mixture prescribed. Temperature, 37°; pulse, about 90; respirations rapid.

May 29.—Became very weak during night, but responded to stimulation; continues maniacal. Respirations very shallow and rapid; pulse rapid and feeble. Cyanosis and dyspnœa profound; cold sweat. Temperature this a. m., 36.4°. Became worse and died at 10.30 p. m.

Necropsy (*twelve hours after death*).—Body of a male, apparently 45 years old. Rigor mortis well developed; slight posterior suggillations; emaciated; muscular development poor; no marks of violence save slight bruise on left arm; pupils dilated; small scar on left knee; anterior mediastinum normal; thymus remains not found; pericardium smooth, glistening, and contains clear serum. Heart: Left ventricle contracted; right soft; opened in situ; both auricles, right ventricle, and venæ cavæ contain fluid blood and soft clotted blood; pulmonary vessels and aorta contain ante-mortem clot; small clot in left ventricle, somewhat adherent to it; aortic orifice competent to hydrostatic test; valves normal; mitral orifice admits two fingers freely; valves normal; tricuspid and semilunar valves apparently all right; coronary vessels patent; myocardium shows no gross changes; heart weighs 320 grams. Left pleura: Adhesions all around apex of lung and to its posterior surface; about 50 c. c. of clear serum in cavity. Right pleura: Slight adhesions at apex and root of lung; no fluid; left lung weighs 870 grams; en masse floats; at apex several cavities containing tubercular débris found; rest of lung congested and toward base œdematous and also very extensively infiltrated with miliary tubercles; bronchial tubes filled with muco-purulent exudate; right lung weighs 880 grams; large cavity at apex; rest of lung similar to left; densely infiltrated with miliary tubercles; bronchial glands enlarged and tuberculous; great vessels and nerve trunks show no gross changes; diaphragm normal; omentum contains some enlarged glands; mesenteric glands enlarged and tuberculous. Spleen: Normal position; weighs 140 grams; has scar on external surface near exterior border; splenic pulp shows no gross lesions; suprarenal glands normal. Left kidney: Position, size, and consistency normal; capsule nonadherent; weight, 180 grams; markings fairly distinct; cortex yellowish. Right kidney: Weight, 160 grams; otherwise same as left; ureters normal. Bladder: Mucous membrane shows catarrhal inflammation, subacute; has slight hydrocele of right tunica vaginalis; large and small intestines show no tubercles or ulcerations; pancreas normal. Liver: Weight, 2,380 grams; advanced fatty changes present. Brain: Skull cap opened and brain examined, but nothing of interest found.

J. M. K.
P. H. B.

Tubercle of lung.

M. B. C.; age, —; nativity, New York; admitted to the United States Marine Hospital, Fort Stanton, N. Mex., December 7, 1900; died March 22, 1901.

Previous history (*condensed from clinical notes of the medical officer in command at St. Louis, Mo.*).—Admitted to the United States Marine Hospital, St. Louis, Mo., November 30, 1900. Family history negative. Personal history of measles, chicken pox, and malaria (1899). Present sickness began about two years and three months ago with cold. Has had cough ever since and has fever in afternoons. Had four night sweats about a month ago. Considerable expectoration. Dyspnœa on exertion, emaciation, lost 35 pounds. Physical examination showed depressions above and below clavicles, dullness over whole right lung, increased vocal fremitus in same, with increased breath sounds and vocal resonance. Left lung apparently normal. Sputum contains tubercle bacilli. General condition improved under treatment. Transferred to Fort Stanton December 3, 1900.

W. G. S.

Condition as noted on arrival at Fort Stanton was as follows: Emaciation, typical chest, nails, and gums; increased vocal fremitus on right side, dullness in right lung, except middle lobe anteriorly, diminished resonance in left apex and base. Right lung had crackling râles all over, with bronchial breathing and pectoriloquy in apex and subclavicular region, and diminished breathing in base. Left lung showed a few râles in apex and base. Heart action weak. Urine gave the Ehrlich diazo reaction and alkaline reaction. Sputum showed many tubercle bacilli. This was a serious case on arrival, and though slight improvement at first occurred it was only temporary, and the case progressed from bad to worse rapidly.

Necropsy (*five hours after death*).—Inspection of body: Emaciation; light hair and blue eyes. Calvarium not removed. Thorax: Anterior mediastinum contained enlarged tuberculous glands. Heart normal. Pericardium contained about 75 c. c. of serous fluid. Right lung almost entirely consolidated and contained several large cavities filled with pus. Left lung consolidated at apex, which showed several small cavities; scattered foci throughout other portions of the same lung. Layers of pleuræ adherent all over right lung and around left apex. Great vessels and nerve trunks normal. Diaphragm adherent to base of right lung. Abdomen: Omentum and spleen normal. Capsules of kidneys slightly adherent. Right suprarenal capsule enlarged. left normal. Urinary bladder distended with urine. Organs of generation, rectum. duodenum, stomach, and gall ducts normal. Liver much enlarged and congested. Pancreas normal. Mesenteric glands enlarged. Small intestines, large intestines, and great vessels normal.

C. R.
P. M. C.

M. N.; age, 45; nativity, Nova Scotia; admitted to marine hospital, Chelsea, Mass., March 28, 1901; died June 4, 1901.

History.—Sickness began four months ago with a sore throat: he was unable to swallow without considerable pain: has night sweats; also cough, which is worse at night. Lost considerable weight. Expectorates a good deal; suffers from shortness of breath, also pain across small of back. He has to pass his urine quite frequently, which is of a very high color. He is constipated and very emaciated.

Physical examination.—Chest: Diminished expansion, the supra- and infraclavicular depressions very much increased, especially on right side. Expirations prolonged. Lungs: Absolute dullness over apex and upper and middle lobes of right lung. Impaired resonance over apex of left lung. Tubular breathing over both apices, also over upper and middle lobes of right lung. Mucous râles over apices of both lungs. Vocal fremitus increased. Genitalia: Patient has only one testicle, the other having been removed. Patient has an ulceration of soft palate and larynx. He has also a very severe cystitis due to tubercular infiltration of bladder. The tubercle bacilli were found in the urine as well as the sputum.

Necropsy (eighteen hours after death).—External appearance: Body extremely emaciated. No post-mortem rigidity. The brain and its membranes normal; weight of brain 1,400 grams. The pericardium contains about 10 c. c. of fluid; the heart normal and weighs 270 grams. Its cavities are filled with chicken-fat clots which extend into the great vessels. The left lung weighs 870 grams, and is bound down at its apex with strong pleuritic adhesions; both lobes are riddled with tubercular deposits. The right lung is small, collapsed, and is so bound down by adhesions that it is impossible to remove it. On section it is found to be filled with tubercular deposits. The spleen weighs 135 grams and is apparently normal. The left kidney weighs 110 grams, and on section its pelvis and pyramids contained a caseous material, the cortex being entirely obliterated: five small cysts are found in its substance containing from 3 to 5 c. c. of clear fluid. The capsule is adherent. The right kidney weighs 220 grams, is congested, and its capsule adherent. On section several small tubercular deposits that have undergone caseous degeneration are found. The urinary bladder contains about 10 c. c. of urine; its walls are thickened, and its mucous surface is covered with tubercular deposits. The liver weighs 1,620 grams and is apparently normal. The organs of generation are apparently normal except that the left testicle is absent, this having been removed before patient was admitted. The stomach, large and small intestines apparently normal.

F. I.

W. E. (colored); age, 36; nativity, Kentucky; admitted to United States Marine Hospital, Fort Stanton, N. Mex., May 28, 1901; died June 9, 1901.

Previous history (taken from clinical notes of medical officer in command, New Orleans, La.).—Admitted to hospital January 31, 1901. Family history: Mother died of consumption. Personal history: Pneumonia twice, twenty-eight and twenty years ago. Present sickness dates from September, 1900, when he took a cold and developed cough and expectoration, which has lasted ever since. Has steadily failed in strength and lost weight. Examination shows emaciation, clubbed finger nails, hurried breathing, deficient expansion at apices, increased vocal fremitus over same, dullness in apices and suprascapular spaces, râles, bronchial breathing, and whispered pectoriloquy over apices. Tubercle bacilli in sputum. Has moderate hectic fever.

C. P. W.

Condition on arrival at Fort Stanton noted as follows: Weakness very great; considerable dyspnœa; emaciation: typical gums and nails; increased vocal fremitus on right side; dullness in upper portions of lungs; crackling râles in right upper lobe and throughout left lung; heart apparently normal; urinalysis negative; sputum contained many tubercle bacilli; afternoon fever. This was a very serious case on arrival, and a fatal termination was expected speedily. Whisky and strychnia were administered as indicated, and the latter probably prolonged life several days. Weakness and dyspnœa increased daily till death occurred, as given above.

Necropsy (*thirteen hours after death*).—Calvarium not removed. Thorax: Anterior mediastinum contained enlarged glands. Heart somewhat enlarged and flabby. Right ventricle dilated; left normal; all valves normal. Pericardium distended with about 200 c. c. of clear straw-colored fluid. Both lungs consolidated nearly all over. Pleural cavities obliterated by firm adhesions. Great vessels and nerve trunks normal. Diaphragm adherent to bases of lungs. Abdomen: Omentum normal. Spleen slightly enlarged and congested. Kidneys, suprarenal capsules, urinary bladder, organs of generation, rectum, duodenum, stomach, and gall ducts normal. Liver enlarged and congested. Pancreas and solar plexus normal. Mensentery loaded with tuberculous glands. Small and large intestines in places showed transverse tubercular infiltration. Great vessels normal. Summary: Dilatation of right ventricle, pericarditis with effusion, tuberculosis of lungs, adhesion of pleural layers, congestion of liver and spleen, tuberculosis of mesentery and intestines.

C. R.
P. M. C.

E. W. (colored); age, 25; nativity, Indiana; admitted to United States Marine Hospital, Fort Stanton, N. Mex., January 29, 1901; died May 13, 1901.

Previous history (*taken from clinical notes of medical officer in command at New Orleans, La.*).—Admitted to hospital December 25, 1900. Family history negative. Personal history, measles during childhood; gonorrhœa several times in last four years. Present sickness began about three months ago with cough, which has been getting worse. Has expectoration, fever, and night sweats. Has lost 16 pounds in weight. Physical examination shows emaciation, diminished expansion on left side, increased fremitus on right side, impaired resonance over right apex, with pain on percussion; broncho-vesicular breathing at right apex. Tubercle bacilli and other forms of bacteria in sputum. Case has not improved in this hospital.

Condition on arrival at Fort Stanton: Weakness, hoarse voice, dysphagia, poor appetite, night sweats, emaciation, diminished movements of right chest, typical chest, nails, and gums. Vocal fremitus greater on right side of chest. Dullness in right apex and upper lobe and in left base. Tenderness on right side all over and in left base. In right upper lobe and apex crackling râles and bronchial breathing. In middle lobe a large cavity anteriorly with gurgling râles; posteriorly bronchial breathing and crackling râles. Left lung shows harsh respiration throughout and crackling râles in base. Heart apparently normal. Urinalysis negative. Sputum contained many tubercle bacilli and various cocci. Blood examination revealed many plasmodia. This was a bad case when he first arrived and steadily lost ground. The throat was very painful and gave much trouble. March 3 a severe hemorrhage occurred. Insomnia was experienced and was hard to overcome. Death occurred May 13, 1901.

Necropsy (*about sixteen hours after death*).—Calvarium not removed. Rigor mortis fairly well shown. Body much emaciated. Larynx shows mucous membrane in front swollen and greatly eroded down to and involving the cartilaginous structure of the larynx. Both true and false vocal cords entirely destroyed. Tracheal mucous membrane congested and eroded in small pin-point areas. Œsophageal mucous membrane pale; no points of ulceration. Thyroid gland shows slight bilateral enlargement, not involving the isthmus. Thorax: Anterior mediastinum contained enlarged tuberculous glands. Heart: Right ventricle dilated and on section showed some hypertrophy of the myocardium; left ventricle of normal size. Large ante-mortem clot at beginning of pulmonary artery. Endocardium normal. All valves normal. Pericardium moderately distended with clear fluid; its layers smooth. The lungs were almost entirely infiltrated with caseous material and contained several large cavities in their apices and in other portions. The pleural cavities obliterated by firm fibrous adhesions, necessitating the opening of the lungs in situ. Great vessels and nerve trunks normal. Diaphragm adherent to bases of lungs and to colon. Abdomen: Omentum normal. Spleen adherent at posterior border. Kidneys showed indistinct cortical markings and swelling of the cortex. Suprarenal capsules show post-mortem cystic degeneration. Urinary bladder partly filled with reddish-brown urine. Organs of generation, rectum, duodenum, stomach, gall ducts, liver, pancreas, solar plexus, mesentery, small intestines, large intestines, and great vessels normal. Adhesions between hepatic flexure of colon and liver. Intestines were distended with gas. Summary: Tuberculosis of lungs, larynx, and trachea; hypertrophy of right ventricle of heart, and cloudy swelling of kidneys.

C. R.
P. M. C.

C. B.; age, 38; nativity, Louisiana; admitted to United States Marine Hospital, Fort Stanton, N. Mex., April 20, 1901; died May 3, 1901.

Previous history (condensed from clinical notes of medical officer in command, New Orleans, La.).—Family history negative. Had urethritis eighteen years ago and malaria several years ago. Present sickness: Says he began coughing about six months ago, and soon lost weight and strength; has lost about 25 pounds. Shortness of breath for past two months. Not much expectoration. Physical examination: Emaciation, fossæ marked above and below clavicles, labored breathing, dullness in left apex, impaired resonance in right, bronchial breathing over left apex, broncho-vesicular over right, and a physiological murmur and rapid action of heart. Sputum contained tubercle bacilli, diplococci of pneumonia, and long chains of streptococci.

This patient was not physically examined at Fort Stanton owing to weakness and his own request that the examination be put off until he felt stronger. For a few days he improved slightly, but this did not continue long. When he arrived he was much bothered with dyspnœa, and this symptom soon became very distressing. Early on the morning of May 3 he became very weak. The usual restorative remedies were administered, but made no impression. Death occurred at 3.30 a. m.

Necropsy (thirty-six hours after death).—Rigor mortis moderate; small amount of post-mortem lividity. Body spare, subcutaneous fat slight. Calvarium was not removed. Thorax: Anterior mediastinum contained enlarged glands. Heart: Right ventricle slightly enlarged. Myocardium softened. Endocardium smooth, a large fibrinous clot extending into pulmonary artery. All valves normal. Pericardium distended with a moderate amount of clear serous fluid. Lungs: Right apex contained two small cavities. The superficial pleural surface scarred in a stellate manner, the cavities lying in this scar tissue. Remainder of lung showed small nodules scattered throughout, the nodules being caseous and mostly surrounding small bronchioles. Left lung could not be separated from pleural wall, being almost entirely consolidated. Great vessels, nerve trunks, and diaphragm normal. Abdomen: Omentum, peritoneum smooth and shining. Spleen showed some adhesions at posterior border, was of small size, and on section showed fibrous stroma. Kidneys of normal size; cortical markings obscured, cortex swollen, and glomeruli as glistening red points. Suprarenal capsules normal. Bladder (urinary) contained small amount of urine. Organs of generation normal. Rectum, duodenum, stomach, and gall ducts normal. Liver normal except for some adhesions between it and hepatic flexure of colon. Pancreas normal. Solar plexus, mesentery, and small intestines normal. Large intestines normal, except for above-mentioned adhesions. Great vessels normal. Summary: Chronic tuberculosis of apex of right lung. Acute tuberculosis of remainder of right lung, and also left. Obliterative fibrous pleuritis. Hypertrophy, with slight dilatation of right ventricle. Chronic splenitis. Cloudy swelling of kidneys.

C. R.
P. M. C.

F. V.; age, 43; nativity, North Carolina; admitted to United States Marine Hospital at Fort Stanton, N. Mex., January 14, 1901; died April 19, 1901.

Previous history (condensed from clinical notes of the medical officer in command, San Francisco, Cal.).—Family history negative. Personal history: Diseases of childhood, mumps eight years ago, gonorrhea and bubo in 1880, a sore on penis three months ago, and pneumonia two years ago. Cough since latter, with profuse expectoration at present. Trace of blood a few days ago. Physical examination showed limited motion of right chest, increased vocal fremitus over right lung to fourth rib, dullness over corresponding area, also over upper lobe of left lung, bronchial breathing over dull areas. Throat sore for past four months; lost 4 pounds; appetite fair; dyspnœa on exertion. Has internal hemorrhoids. Has erosion of right vocal cord, with pain in swallowing and partial aphonia. Later a cavity discovered in right upper lobe. Tubercle bacilli found in sputum. Urinalysis negative.

F. J. T.

Physical condition as noted on arrival at Fort Stanton was as follows: Suspicious scars on legs; typical chest and nails; limited motion of right chest; hoarse voice; cough and dyspnœa; increased vocal fremitus in right lung; dullness in right lung anteriorly merging into liver dullness; posteriorly dullness in upper lobe. Crackling râles in right lung, bronchophony above, prolonged expiration, diminished breathing in base (left), in left lung a few crackling râles, and roughened breathing in apex. Heart somewhat displaced to right. Urinalysis negative. Sputum contained tubercle bacilli. This was a serious case on arrival. He improved for a time, but later on began to retrograde, steadily going down till the day previous to death, when a sinking spell was experienced, from which he partially recovered.

Necropsy (*about seven hours after death*).—Rigor mortis moderate; posterior lividity not seen; calvarium was not removed. Thorax: Anterior mediastinal glands enlarged. Layers of right pleura adherent all over by firm fibrous adhesions. Left pleura adherent to chest wall, pericardium, and diaphragm. Superior and middle lobes of right lung firmly bound to chest wall and contained several large cavities filled with pus. Lower lobe and portions of upper lobes not entirely destroyed were devoid of air and filled with caseous material of granular consistence. Left lung had small cavity in apex. Pleura covering left apex was scarred in radiating lines. Entire upper lobe infiltrated with caseous material. Lower lobe showed miliary nodules throughout. Small amount of frothy fluid pressed from cut surface. The smaller bronchi contained pus. Heart of soft consistence. Anterior coronary artery twisted in course. Aortic and pulmonary valves competent. Right side of heart presented evidences of dilatation, with hypertrophy. Tricuspid orifice admitted four fingers readily. Left heart normal throughout; mitral orifice admitted three fingers. Endocardium of entire heart smooth and shining. Myocardium at interventricular septum showed white lines, indicating fibrous change. Beginnings of aorta and pulmonary arteries smooth. Layers of pericardium free. The pericardial cavity contained a small amount of straw-colored fluid. Tongue soft and flabby and very pale on cut section. Mucous membrane of almost entire larynx eroded. At site of erosions were nodular swellings of large pea size. Edges of ulcerations indefinite and the bordering mucous membrane swollen. Vocal cords, true and false, entirely destroyed. Tracheal mucous membrane strongly injected and covered with purulent mucus, but was intact. Mucous membrane of œsophagus pale, but smooth. Peribronchial lymph glands enlarged and deeply pigmented. Abdomen: Peritoneum smooth and shining. Pelvis contained some fluid. Great omentum covered intestines in front. Separable fibrous adhesions between right lobe of liver and diaphragm. Spleen adherent at posterior border and to tail of pancreas and splenic flexure of colon. Splenic substance softened and showed several small caseous areas, especially numerous just beneath capsule. Kidneys of small size and had adherent capsules. Cortical substance narrowed. Glomeruli showed as glistening points. Cortical markings indistinct and points of fibrosis present. Suprarenal capsules normal. Urinary bladder contained a small amount of urine. Organs of generation normal. Stomach normal on peritoneal surface. Liver shows the centers of the lobules to be darker than those of the periphery. Pancreas adherent to spleen. Throughout ileum tubercular infiltrations of varying size, showing tendency to encircle the bowel wall. Lymph channels running from these points to the omental lymph glands were infiltrated and nodular. Lymph glands enlarged and caseous. Tubercular foci especially numerous near ileo-cæcal valve. Beginning of appendix and adjacent cæcal wall in same condition. Large intestine contained smaller tubercular foci, more scattered. Summary: Tuberculosis of superior and middle lobes of right lung and upper lobe of left. Obliterative fibrous pleuritis. Miliary tuberculosis of lower lobes of both lungs, spleen, intestines, and lymph glands generally. Passive congestion of liver. Chronic interstitial nephritis. Tubercular ulceration of larynx.

C. R.
P. M. C.

T. W. S.: age, 33 years; nativity, Sweden; was admitted to the United States Marine Hospital, port of San Francisco, Cal., May 19, and died May 21, 1901.

History.—Two months prior to admission patient caught a bad cold. Since then he had lost about 15 kilos in weight and became extremely emaciated and weakened.

He had had no hemorrhages, but for some time had had night sweats. Patient had a cough for these two months. Complained also of great dyspnœa. Had hectic flush. All the physical signs of cavity were found in the left lung about the fifth interspace. There was dullness on percussion over both apices and on auscultation râles were heard all over the lung. Sputum was very thick and ropy and contained a large amount of elastic fibrous tissue; bacilli tuberculosis; streptococci and staphylococci. Patient was put on stimulants, with easily digestible food and a sedative expectorant, but grew weaker, and died May 21, 1901, at 10 p. m.

Necropsy (*fourteen hours after death.*)—Body that of a young adult white male, extremely emaciated. Rigor mortis well marked. Suggillations not well marked. Brain: Weight, 1,460 grams. Dura mater adherent to brain substance at quadrate lobe of right hemisphere. Pericardium contained about 25 c. c. of serous fluid. Heart: Weight, 200 grams; veins engorged; heart muscle pale and poorly nourished. Valves are normal. All the large vessels contain large amounts of a dark fluid blood. Left lung: Weight, about 600 grams; pleura inflamed at base, a localized pleurisy. Lung adherent in several places by strong fibrous bands and covered by tubercular nodules. There was a large cavity in the middle lobe, filled with pus. The lung also presented numerous foci of cheesy degeneration. Right lung: Weight, 1,450 grams; presented adhesions at the base. Right bronchus filled with pus. Lung congested and œdematous and studded with tubercles. Liver: Weight, 1,450 grams; pale, firm; wire edge well marked. Right lobe of liver was considerably elongated. Stomach: Capacity, 2,500 c. c.; was considerably dilated, and contains undigested food. Spleen: Weight, 120 grams; slightly contracted. Left kidney: Weight, 170 grams; hard capsule strips easily; markings sufficiently distinct. Cortex normal. Right kidney: Weight, 150 grams; same condition as left kidney. Pancreas normal. Intestines normal.

L. S. S.
C. W. V.
J. M. G.

Tubercular mesentery.

M. O'D.; age, 27 years; nativity, Ireland; admitted to United States Marine Hospital, Detroit, Mich., February 11, 1901; died April 14, 1901.

History.—Family history negative. Patient had previously had no serious illness. In July, 1900, a small bunch appeared in the left groin, apparently connected with the spermatic cord of that side. This has slowly increased in size. At times there has been considerable pain. Has lost about 20 pounds in weight. No cough; appetite poor; bowels regular. No prominent symptoms, but a general weakness and malaise is complained of.

Physical examination.—The tumor in left groin is about 10 cm. by 6 cm., hard, nodular, and apparently involving the epididymis. What seems to be the testicle can be made out behind the tumor. Thoracic and abdominal viscera apparently normal. A provisional diagnosis of "hydrocele" was made. On the 13th of February the scrotum was opened, and the diseased testicle and epididymis were removed. Section of the spermatic cord was made close to abdominal wall. The tunica vaginalis was also removed. Microscopic examination of the tumor revealed its evident tubercular nature. What seemed to be a normal testicle behind the tumor before the operation was a tubercular mass beginning to soften. Both testicle and epididymis were involved. There was no evidence of enlarged glands in either groin. His recovery from the operation was uninterrupted. On the 19th the stitches were removed and wound sealed with collodion; no further dressing. Following the operation there was an increase in the pulse rate, although that had been high before—80–100. Temperature was normal as recorded at morning and night. Now the pulse rate increased to 100–120, and the evening temperature was 37.4°–37.6°. There was no improvement in the general condition; on the contrary, the patient was slowly losing ground.

February 28.—Attention was called to an enlargement in abdomen to the left of the median line between the umbilicus and the free margin of the ribs; nearly circular to the feel superficially, about 15 cm. in diameter. It was thought that it might extend to the right of the median line.

March 1.—Stomach very irritable; tumor increasing in size.

March 8.—Examination shows the tumor in abdomen to be steadily increasing in size so that now it can be made out to right of median line, and in left lumbar region, inguinal glands right side beginning to enlarge. Later he complained of severe pain in left hip and thigh. Pain in abdomen was never very severe.

April 1.—Patient was discharged, and readmitted on the following day under the diagnosis "tubercle of mesentery." The tumor in abdomen is rapidly increasing in size. Temperature ranges between 37 C.-38 C., but the pulse is becoming more rapid. Sedatives are necessary to allay the pain in hip and thigh. Patient finally became extremely emaciated, and died April 14, 1901.

Necropsy (eleven hours after death).—Body is pale, except posteriorly, where blood has gravitated. Abdomen distended. Tumor seems to fill left half of cavity. The incision made from ear to ear was almost bloodless. Skull cap glistening white. Very little blood in longitudinal sinuses. Cerebral spinal fluid apparently normal in appearance, but reduced in quantity. Dura readily removed from brain. Aside from a general dryness of the tissues, nothing abnormal was found in the brain. Incision from chin to symphisis pubis showed superficial adipose tissue almost entirely wanting. As abdomen was opened, bloody serum followed the knife, part of which was gelatinous in consistency. The lungs were not collapsed. Right lung free; there were a few pleuritic adhesions on left side. On removal and section both were in practically the same condition, congested and studded with tubercles varying in size from 1 cm. to 5 cm. in diameter, none of which had broken down. Weight: right, 640 grams; left, 780 grams. Pericardium normal; 20 c. c. of fluid. Heart soft and pale; weight, 220 grams. Ante and post mortem clots in all the cavities. Valves normal. Aorta normal. The tumor occupying the left side of the abdomen was found to be a tubercular mass, chiefly involving greater omentum. The upper central portion lay between the stomach and transverse colon, separating them 12 cm. The wall was easily ruptured with the fingers, and a quantity of purulent, broken down omental tissue, about 1,000 c. c., was taken out with the hands. Laterally, between the descending colon and the parietes, there was another and even larger collection of the same material. The abdominal contents were not adherent, except in the immediate vicinity of the tumor, and the adhesions were readily broken up, leaving the viscera apparently normal and showing that the process had been very acute. Spleen 10 cm. in length, 7 cm. in breadth; color dull gray, capsule slightly wrinkled; on section rather dry; weight, 130 grams. Left kidney 12 cm. long, 6 cm. broad, and 3 cm. thick; capsule strips readily. Numerous small hemorrhagic spots beneath capsule. On section a small quantity of turbid urine escaped from pelvis, the walls of which seemed to be thickened and to have encroached upon the medullary substance. Cortical and medullary portion pale. Weight, 120 grams. Right kidney a trifle larger than left, but otherwise presented no marked difference; weight, 140 grams. Bladder contained 100 c. c. clear urine and was apparently normal. Prostate gland not enlarged. Right testicle normal in size and appearance. Stomach contained about 300 c. c. fluid. Mucous membrane covered with a thick, gray coat. Small intestine contained a moderate amount of yellowish fluid. Mucous membrane pale and apparently normal. Large intestine presented no abnormalities until the descending colon was reached, the walls of which were thickened and contracted to about one-half its normal caliber. It was filled with small, hard, fecal masses. No ulcers on the mucous membrane. Liver firm and pale. Section shows it to be dry and studded with tubercular masses, varying in size from 5 cm. to 3 cm. in diameter. The larger ones had begun to soften. Weight, 1,540 grams. Mesenteric and retroperitoneal glands generally enlarged.

J. G.
E. K. S.

Acute miliary tuberculosis.

E. G.; age, 37; nativity, Ireland; admitted to United States Marine Hospital, Baltimore, Md., December 14, 1900; died March 10, 1901.

Family history.—Both mother and father living and well, aged 63 and 75, respectively; has four brothers and three sisters, all of whom are living and well.

Personal history.—Habits are fairly good. Had the usual diseases of childhood. Syphilis ten years ago. Present illness started one week before admission to hospital, when the patient was taken with a sudden stitch-like pain in the left side near the nipple, exaggerated by deep breathing and coughing. When admitted the condition had been gradually growing worse, although the patient was not extremely uncomfortable. Inspection showed a moderate degree of immobility in the right chest, with a slight bulging of the intercostal spaces. Tactile fremitus diminished. Percussion note flat all over right chest, not changing with position of patient. Auscultation revealed breathing of a tubular character in the extreme upper axillary region. Left lung shows exaggerated respiratory sounds. Apex beat displaced to the left. Temperature, 39.6 C.; pulse, 104; respiration, 26. On December 17 the right pleural cavity was aspirated and 400 c. c. of serous fluid removed. On December 22 the chest was again tapped and 1,600 c. c. of fluid removed. After each aspiration the patient seemed to feel a little better. This process was repeated March 2 and 1,000 c. c. drawn off. During the entire time the patient was in the hospital there was a morning remission and evening exacerbation of temperature, varying from 37° C. to 39.6° C., but with no regularity in degree. The case was remarkable for an almost entire absence of any inconvenience in breathing during the whole course of the disease and also for the absence of cough. There was scarcely any pain except during the last week, when constant pain in the head was complained of. From the time of admission the patient grew slowly though steadily worse, but as far as could be observed the physical signs did not change. There were several irregular, moderately severe chills, and at intervals a decidedly profuse, cold perspiration. Consciousness was retained until two days before death.

Necropsy (*ten hours after death*).—Height, 6 feet; general nourishment poor; post-mortem lividity slight; rigor mortis very slight. Heart: Weight, 365 grams; anæmic; walls somewhat flabby; all valves competent. Nares, larynx, and trachea normal. Lungs: Left, weight, 670 grams. The entire lung profusely infiltrated with small tubercular deposits. Right, lung compressed; some tubercles distributed throughout its substance, but not nearly as many as in left lung. Visceral layer of pleura thickened and fibrous. Left pleura shows no adhesions; right pleura covered with flakes of recent exudate. The cavity contained 450 c. c. of fluid. There were adhesions posteriorly and at the apex. The diaphragmatic pleura was also involved and presented some small tubercular deposits. The organs of the gastro-intestinal tract were normal. Liver and pancreas were normal except that the peritoneal covering of liver was slightly involved with tubercle. Kidneys: Left, weight, 220 grams; capsule nonadherent; cortex thin; slight passive congestion. Right—weight, 165 grams; capsule nonadherent; cortex thin. Bladder: Walls slightly congested. Spleen: Weight, 160 grams; congested; pulp slightly softened. Brain: Weight, 1,650 grams; slightly œdematous, otherwise normal. Other organs normal.

W. C. B.
B. W. B.

Tubercle.

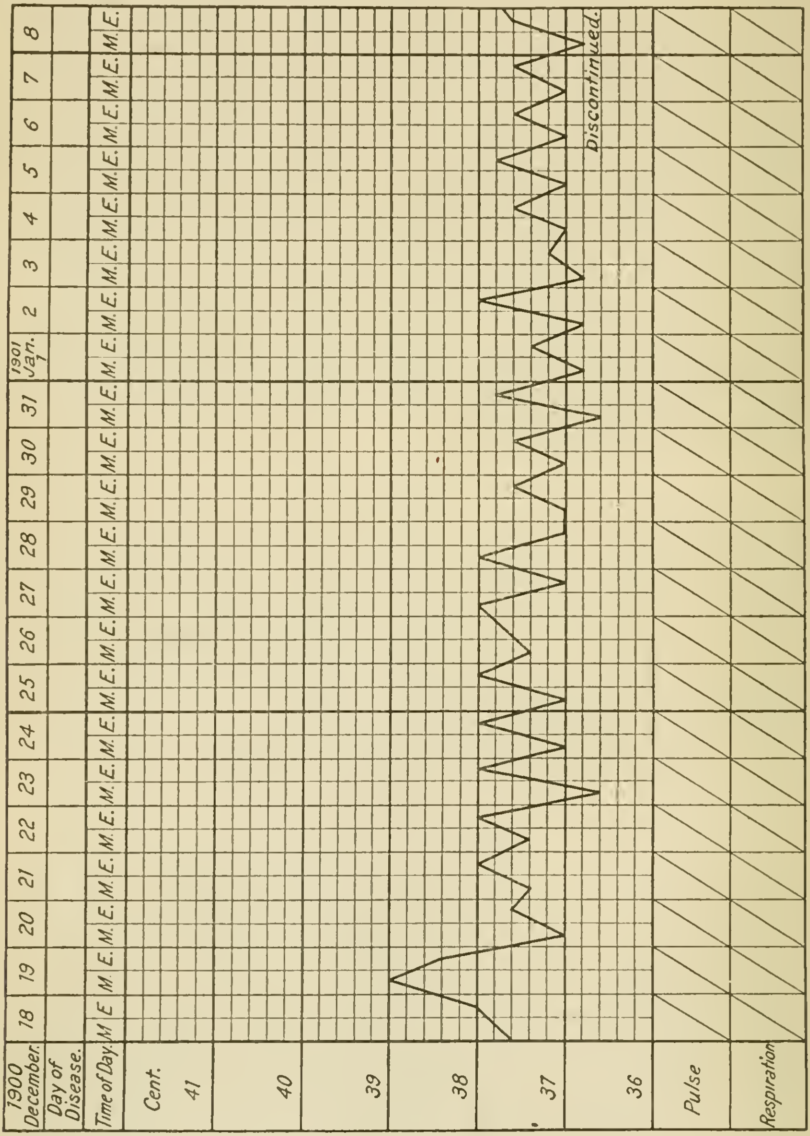
E. J.; age, 37 years; nativity, Norway; was admitted to the United States Marine Hospital, San Francisco, Cal., November 22, 1900, and died March 29, 1901.

History.—At time of entering hospital patient complained of pain in chest, intensified by taking deep inspiration. He had been suffering with this about three weeks. He also complained of dyspnœa. Examination revealed a dull area over base of right lung and some small friction sounds in right mammary and axillary regions. A diagnosis of acute lobar pneumonia was made and patient was treated for the same until December 17, when he was discharged, improved, and readmitted December 18, with diagnosis of tubercle. At that time he had a bad cough, with profuse expectoration and great loss in weight.

Examination.—Inspection: Patient was quite emaciated; comparative immobility of chest; all diameters of chest diminished. Expansion, 5 cm. Percussion: Dullness over apices of both lungs anteriorly and posteriorly, extending down to about the third rib. Vocal fremitus greater on right side. Ausculation: Bronchial breathing over apex of right lung anteriorly; crepitant râles over lower lobes; vocal resonance increased on right side. The tubercle bacilli were found in great numbers in the sputum. At times the sputum was blood tinged. The patient at times presented various manifestations of his weakened condition, such as œdema and swelling of the ankles, ecchymoses on legs and thighs, swelling and pain in scrotum, and, lastly, ascites, for which patient was tapped several times. The last time 4,200 c. c. were drawn off. The treatment was symptomatic, with stimulation and abundant, easily digestible diet; but the patient continued to grow weaker, and on March 29, at 10.30 a. m., died.

Necropsy (*three hours after death*).—Body that of a much emaciated white, adult male, 1.75 meters in height; weight, 45 kilograms. Rigor mortis and slight post-mortem lividity present. Several areas of ecchymosis on anterior surfaces of thighs and legs. Brain: Weight, 1,290 grams, apparently normal. Anterior mediastinal areolar tissue somewhat deficient. Heart: Pericardial cavity contains about 50 c. c. of serous fluid. Heart small and in a condition of systole; aortic and pulmonary valves support a column of water; heart muscle flabby and walls thinner than normal; no valvular lesions; weight, 180 grams. Pleura: Adhesions of entire surfaces on both sides being firmer and older at apices. Lungs: Left, weight, 720 grams; floats in water; over entire surface are scattered miliary tubercles, many of which are in a condition of caseation. Several small cavities found in upper lobe, and the apex is entirely consolidated. Right lung: Weight, 520 grams, and in a condition similar to left. Peritoneal cavity contains about 800

c. c. of serous fluid. Liver: Weight, 1,300 grams, slightly congested, otherwise apparently normal. Gall bladder distended with bile, but its duct was patulous. Spleen: Weight, 120 grams; quite firm, but malpighian bodies were indistinct. Kidneys: Right, weight, 170 grams; left, 160 grams, in every way similar. Capsules strip readily; surfaces smooth; cut section rather dark; medullary rays well marked; malpighian pyramids darker than normal. Intestines: Peritoneum apparently normal; mucous membrane congested and several tubercular ulcers in ileum. Bladder distended with urine; walls normal.



Microscopical report.—Pericardium: Appears somewhat thickened and its surface is covered with a layer of fibrin. It is infiltrated with lymphocytes. The subpericardial areolar tissue is increased in amount and some of the flat cells are atrophic in character. Heart: Over the greater portion of the section the muscle cells and their nuclei stain well; the longitudinal striations are well marked, but the cross striations can not be made out. The cells throughout show a deposit of fine, brown granular material, indicative of brown atrophy. The increased subpericardial fat seems to extend between the muscle fibers near the surface, and these fibers are granular, atrophied, and broken down, their nuclei staining very poorly. Pleura: This shows an increase in size and number of endothelial cells and an immense deposit of fibrin, which is infiltrated with many new connective tissue cells, epithelioid cells, and lymphocytes. The blood vessels are increased in number. Lung: The air spaces over most of the section are filled with red blood cells and a few desquamated epithelial cells and lymphocytes. The walls of the infundibuli and air sacs are all quite distinct, but thickened and infiltrated with epithelioid cells and lymphocytes. At various places in the section are seen conglomerations of miliary tubercles in all their stages. These consist mostly of epithelial, epithelioid, and giant cells, and lymphocytes. Some of them are well circumscribed by a stroma of new connective tissue, and have begun to caseate in the center and show the beginning formation of cavities. These are filled with degenerated epithelioid cells, lymphocytes, pus, and nuclear débris. The walls of the bronchi are thickened and infiltrated with tubercle tissue. All of the walls of the blood vessels are thickened, and some of the vessels are involved in the tubercular process. Liver: Glisson's capsule somewhat thickened and infiltrated with lymphocytes. The entire section is extremely hyperemic. The injection is greatest at the periphery of the lobules, and hence these are well defined. All of the liver cells with a few exceptions appear quite normal and their nuclei are all well stained. A few of the cells contain fat droplets, indicative of beginning fatty infiltration. Diagnosis: Acute congestion with beginning fatty infiltration. Kidney: The capsule appears quite normal. The medullary rays are distinctly marked. In places in the labyrinth the glomeruli have fallen out of the Malpighian bodies, leaving the empty capsules. The entire section appears quite congested. The capillary tufts of the Malpighian bodies are considerably distorted and shrunken away from the capsules. The nuclei of the glomerular capillaries and the epithelial cells and their nuclei lining Bowman's capsules stain quite well. Bowman's capsules are normal. The cells and their nuclei of the parenchyma and collecting tubules stain well. The section as a whole, with the exception of the hyperemia, appears quite normal. Spleen: The capsule and trabeculæ show no pathological lesions. The Malpighian corpuscles are quite distinct, and are ensheathed by dense adenoid tissue. The reticulum is well defined and quite normal. The splenic pulp consists of ordinary pulp cells, lymphocytes, connective tissue cells, epithelioid cells, and red blood corpuscles. The specimen is somewhat congested.

J. M. G.
A. M. M.

Tubercle of lung, with tubercular growth in cerebellum.

M. McC.; age, 38 years; a native American; entered the marine division of the Buffalo Hospital of the Sisters of Charity on May 20, and died on June 14, 1901.

History.—On entry he gave a history of having sustained an injury from a fall from the deck of his vessel, some 2 meters, to the rail and thence into the water. This was during February last. Just prior to this accident he had been an inmate of the marine hospital at Stapleton, Staten Island, under the diagnosis of "spasmodic asthma," from which he had suffered for fifteen years, the attacks having been more pronounced during the past two years. He was discharged from that hospital February 4 improved. He was readmitted to the Stapleton Hospital March 11 under diagnosis of "ocular vertigo," and discharged therefrom April 9 improved. Through the courtesy of the medical officer in command of that hospital I am enabled to quote the symptoms presented at that time:

"History of tuberculosis on the mother's side; he had suffered with spasmodic asthma and bronchitis for fifteen years; the attacks had been of increased severity during the preceding (last) two years. Some bronchial râles in chest, but no evidence of tuberculosis was found. At the time of his second admission to hospital he presented a totally different set of symptoms, as follows: Present condition began during the stay of patient in hospital during January and February, but he had not mentioned it. It began with a feeling of numbness in lips and gums. This gradually increased, extending to his forehead and sides of his face. Says the sensation is that of the parts being asleep. Sense of touch unimpaired. Complains of vertigo and of rushes of blood to the head with certain movements. His eyesight is impaired to the extent that it requires thirty seconds to a minute for him to distinguish an object clearly after fixing his gaze upon it. He sees better with his head to the left, and if a quick motion of the head is made to the right he can not see for some little time. There is numbness also of the tongue; there is no impairment of taste or speech; there is no pain; his general condition is good; bowels and appetite normal; sleeps pretty well. On physical examination no paralysis or atrophy of muscles found. There is slight ptosis on each side; pupils dilated and respond slowly to light and accommodation. Sensation is not impaired in any part. There is staggering gait, but he easily controls his movements. There is no steppage gait present; patellar reflexes slightly increased; no ankle clonus; condition of fine muscular movement is good; no tremors present. History of alcoholic indulgence during last two months; there is no history nor any evidence of syphilis. His condition changed very little in hospital, on nux vomica and other tonics. The catheter was used several times owing to lack of power to urinate voluntarily. He was discharged April 9 improved of his ocular vertigo."

When admitted to the hospital in Buffalo he dwelt upon the statement that all of his symptoms dated from his fall during February. Although I received the history from New York some time after his death, I was convinced that the fall had been only coincident to an attack of vertigo, and that this depended upon antecedent disease.

Present status.—He is a muscular man, fairly nourished. Upon full view it is seen that there is marked loss of coordination of eye movements; the pupils are unequal, and at one moment dilated, at another contracted; dilation is the rule. There is slight ptosis and an expression of listlessness. On attempting to walk there is quite marked incoordination and staggering, with a tendency to fall toward the left; the left foot is dragged, and there is some spasticity. On resuming his chair he states that there is still some vertigo, also that there is vertigo when he is reclining. After such exertion he is much exhausted and there appears a marked paresis of the external rectus sight. He states that there is no feeling in his left face, gums, and tongue, but there is no analgesia, and no paresis of the muscles. This numb sensation also is present in his left hand, and there is difficulty in holding a glass or pencil; there is slight intention tremor; there is absolutely no difference in muscular power of the two hands and arms; there is commencing spasticity in the muscles of the left arm. The left leg is spastic; the knee reflex is increased, the excursion greater and oscillatory; there is slight ankle clonus; the muscles react normally to the electric current; there is no reaction of degeneration. He states that there is no numbness in this leg; there is no paresthesia. The right patellar reflex is slightly increased; no ankle clonus. The right lung is in a peculiar condition; percussion gives a slightly increased pitch over the whole lung, especially at the post-inferior area; auscultation shows a generally inhibited breathing; the inspiration is shallow, short, and there is absence of vesicular expansion. There are a few tubal sibilant râles; expiration is forced, the abdominal muscles coming into play. Left lung is hyperresonant save at its apex, where there is subclavicular dullness; inspiration and expiration are full, the chest wall rising perceptibly more than on the right. There is cogwheel breathing in the apex and some coarse râles. There is cough, but little expectoration. Heart sounds normal, or the second sounds slightly accentuated. Urine normal. From the presentment there was diagnosed left cerebellar tumor, and the question of operation for its removal was presented to him. This was so different from the earlier diagnoses that he demurred. During the second day of his stay in hospital the sputum was carefully stained with both carbol-fuchsin and anilin-gentian violet, and the tubercle bacillus found in numbers. These I believed to be from the left apex and not the right lung, whose symptoms depended upon the pressure from the cerebellar growth. This growth was diagnostically located from the symptoms in the middle peduncle of the left cerebellum, involving directly the fibers of coordination, and those passing directly to the lateral tracts of the cord, accounting for the vertiginous attacks and the spastic features of the left side. The ocular symptoms, paresis of sixth pair sight, and the right pneumonic condition were attributed to pressure of the growth toward the fourth ventricle, involving the fasciculus teretes, the corpora quadrigemina (left), and the origin of the right pneumogastric. When it was definitely decided that the patient was tubercular, and the great probability that the growth was also tubercular, and, from the extensive area involved, that it was a diffuse tubercular lesion, and although the absence of pain showed no meningeal involvement, the question of operation for removal was not pressed. Treatment was expectant. Within a few days the general condition was worse, and it became evident that surgical intervention offered no hope of recovery. All symptoms became daily more accentuated and he became almost helpless in walking; also there were gastric crises, some pain, and the spontaneous ejection of the stomach contents. On the night of July 10, while endeavoring to rise from bed and walk a short distance, he fell heavily and could not arise, and was carried to bed. There was great disturbance of breathing, the face became livid, and suffocation imminent. From this he slowly rallied, the lips and tongue being so paretic that he could not speak—ataxic aphasia. When seen on the 11th he was somewhat improved and tried to relate his night's experience. Both lungs were becoming œdematous; the diaphragm was paretic, and there was great difficulty in breathing, which was shallow. He was still vertiginous and did not again leave his bed. The rectum and bladder showed impaired sensation, but the musculature was unimpaired. From this time until the morning of the 14th he gradually sank, dying from respiratory arrest.

Necropsy (six hours after death).—Body of fairly nourished man; rigor commencing; pupils dilated. Owing to request of friends the examination was limited to the brain. Calvarium removed: meninges slightly congested; cerebral hemispheres normal; upon lifting out the brain the left cerebellum seems increased in size, and its pia mater is much congested, and on lifting the little brain a round tumor, perfectly encapsulated, appeared resting in the fourth ventricle, amid soft cerebellar débris, while in the left peduncle of the organ, on its inferior surface, there is a cavity with softened walls, from which it is evident the tumor has recently rolled into its present position. Coarse dissection shows destruction of almost all bundles of fibers passing through the middle peduncle, as well as the gray substance of its inferior surface. The cavity is 4 cm. by 3 cm. The tumor is a 2 cm. sphere, capsule well defined; upon section it is a simple cheesy mass without tissue framework; cover slip preparations gave only débris, and although many were made it was impossible to find the tubercle bacillus, nor was this organism found in the débris of the cavity walls.

A retrospect of the case shows the commencement of cerebral symptoms in January, 1901, when this man first went to hospital, but there is definite history of spasmodic asthma for fifteen years, this being accentuated during the two years prior to going into hospital. However, this asthma was peculiar in that the medical officer's statement at New York is that "there were no attacks of asthma while the man was in hospital," from January 24 to February 4, when he was discharged improved. His later visit, from March 11 to April 9, to that hospital gave only a condition ascribed to "ocular vertigo." From the microscopic appearance of the tumor it must have antedated January, 1901, the date of his first sensory phenomena. The position of the tumor in the cerebellum would entail pressure upon the floor of the fourth ventricle about the origin of the pneumogastric on the left side. Could this have caused the exacerbations of the old spasmodic asthma? It would seem that this was the case, rather than to assume the commencement of the new growth to have been at the time of his visit to the hospital at New York, his then rapidly developing symptoms being due to pressure degeneration.

E. W.

Tubercle

J. B.; age, 23 years; nativity, Samoan Islands; was admitted to the United States Marine Hospital, port of San Francisco, Cal., March 26 and died June 5, 1900.

History.—Patient had been ill six months when he applied for admission. Began with a cough, which continued up to the time of his death. About two months prior to admission suffered from dyspnœa and vomiting. Also complained of night sweats and great pain in chest for the fifteen days before admission. Had lost weight rapidly before illness began. Weight, March 26, 1900, 145 pounds.

Physical examination.—Inspection: Great emaciation; chest flat; clavicles prominent; forced breathing, and deficient chest expansion. Palpation: Apex beat felt at left nipples; pulsation in third left interspace; vocal fremitus increased over both apices. Percussion: Tympanic note in left clavicular region; dullness below this extending into axillary region of same side, dullness over right apex anteriorly and over both posteriorly. Auscultation: Amphoric breathing over left apex anteriorly and posteriorly; crepitant râles over right apex; bronchial breathing over bases; vocal resonance increased over right apex. The diagnosis of tubercle was made, the bacillus having been found March 28, 1900, and the patient was put on the usual treatment of creosote and cod-liver oil. The disease continued to progress rapidly, involving the larynx and middle ear on both sides, causing complete deafness; the physical signs increased in intensity; vomiting was so severe that all medical treatment was discontinued and dietetic treatment began. Patient continued to lose weight, weighing, May 5, 118 pounds. Larynx so involved that speech became unintelligible; suffered greatly from dyspnœa, and on June 5 died from exhaustion.

Necropsy (*twenty-one hours after death*).—Body that of a young mulatto, adult male, well developed, but poorly nourished; rigor mortis present. Stained areas over thorax and small vesicles above and below clavicles; subcutaneous fat scanty; abdomen retracted. Anterior mediastinum normal; extensive pleuritic adhesions over both lungs. Lungs so adherent to chest wall and so badly degenerated as to prohibit removal. Section shows caseous areas throughout. Pericardium contained about 100 c. c. of serous fluid. Heart: Weight, 350 grams; muscle flabby; cavities filled with firm fibrinous clots; valves competent; a few atheromatous plaques in asce ding aorta and coronary arteries. Posterior bronchial glands greatly enlarged and caseating. Kidneys: Left, weight, 180 grams; right, 175 grams; absence of fat about capsules; capsules nonadherent; the kidneys themselves show parenchymatous changes. Liver: Weight, 1,710 grams; resistant on section; cut surface mottled; centers of lobules purple and depressed. Spleen: Weight, 220 grams; consistency firm; outer surface purple and studded with tubercle. Mesentery glands much enlarged. Intestines: Tubercular ulcers in mucous and muscular coats and extending down to serous coat. Brain: Cerebrospinal fluid in excess, otherwise normal. Petrous portion of temporal bone found filled with caseous matter.

Microscopical report.—Lungs show well-defined areas with caseated centers consisting of a granular material with broken-down cells and nuclear débris. Surrounding this is a zone of epithelioid cells and lymphocytes. The surrounding lung tissue is more or less hyperæmic and the alveoli filled with a granular material which is coagulated albuminous exudate. Liver: Through substance of the organ are seen small, well-defined areas with crenated centers and a periphery of lymphocytes and epithelioid cells. Many show giant cells. The intralobular veins are filled with coagulated blood, and the liver cells are small, granular, and atrophic; the connective tissue is normal. The picture is one of beginning tuberculosis and cyanotic atrophy. Kidneys: Glomeruli, descending limb of Henle's loop, and conducting tubules are normal; the spiral and convoluted tubules, also the ascending limbs of Henle's loops, are broken down and degenerated. The cells are finely granular and grayish in color; their nuclei do not take the stain. Specimen shows one small, well-developed area, which consists of a mass of lymphocytes, epithelioid cells, and nuclear débris. Interstitial cellular tissue is normal; a parenchymatous nephritis and beginning tuberculosis. Spleen: Trabeculæ fairly normal, loose, and flocculent in structure. Malpighian bodies irregular in outline, and lightly packed Malpighian vessels show a thickened intima. Pulp is hyperemic and full of well-defined patches consisting of a central caseating portion with well-defined surrounding zone of lymphocytes and epithelioid cells, also giant cells in the caseated area. Tuberculosis and hyperemia. Small intestine: Mucous membrane atrophic; villi small; Lieberkuhn's crypts short and illy defined. In submucosa is a thickened area consisting of lymphocytes, plasma cells, epithelioid cells, and nuclear débris; muscular and serous coats normal. Tuberculosis of the small intestine.

A. M. M.
J. M. G.

C. B. (colored); age, 25 years; nativity, Tennessee; admitted to the United States Marine Hospital, St. Louis, Mo., March 16, 1901, and died April 15, 1901.

History.—Patient stated that he had had a cough for several months. The sputum was examined and tubercle bacilli were found to be present. The physical examination showed dullness on percussion, increased vocal fremitus, diminished expansion on the right side, and roughened breathing on both sides. The temperature was 38.2, pulse 87, and respirations, 24. The fever continued to the day of his death, sometimes rising in the evenings to 40.2. He became greatly emaciated and so weak that he could not get out of bed without assistance. He had no hemorrhages, but suffered from night sweats. He died at 10 o'clock on the morning of April 15, 1901.

Necropsy (*six hours after death*).—Height, 176 cm. Rigor mortis not well marked; body poorly nourished; pupils dilated; teeth covered with sordes. Brain: Weight, 1,285 grams; tissue normal; no tubercles in membranes. Stomach much distended with gas; blood vessels engorged; omentum congested. Heart: Weight, 225 grams; right side empty; both lungs filled with tubercles throughout. Posterior mediastinal space filled with tubercular glands. Spleen: Weight, 700 grams; measurements, 19 by 7 by 11 cm.; color, dark; tissue filled with grayish, caseous tubercles, some of them as large as a pea. Left kidney: Weight, 200 grams; measurements, 12 by 7 by 4 cm.; capsule adherent, tough on section; cortex thin, pyramids prominent. Right kidney: Weight, 185 grams: measurements, 12 by 7 by 4 cm.: condition the same as the left kindney, except the cortex contains tubercles. The bladder contains 200 c. c. of urine. Liver: Weight, 2,075 grams; measurements, 29 by 22 by 9 cm.; color, dark; tissue tough and dry on section, filled with small tubercles.

W. G. S.

Pericarditis, suppuration, and interstitial nephritis.

G. G.: age, 42 years: nativity, Finland: was admitted to the United States Marine Hospital, port of San Francisco, Cal., January 31 and died October 15, 1900.

History.—Family history negative. Patient entered hospital complaining of a cough accompanied by a profuse muco-purulent expectoration which was at times streaked with blood. He also complained of loss of weight, night sweats, and dyspnœa upon slight exertion. Upon examination both supra-clavicular regions were found slightly shrunken, vocal fremitus increased in the region of both apices, dullness of both apices, and crepitant and subcrepitant râles were heard over both lungs. Patient contracted measles on March 26, 1899, which cleared up about April 1, 1899. Patient had suffered at intermitting periods throughout his illness from attacks of epistaxis and diarrhea, with occasional hemorrhages from the lungs. His temperature has varied from normal to 39° C. Upon examination of his sputum at various times the tubercle bacilli were found in great numbers. The patient's heart had at times been very rapid, but was always of fairly good tension. His feet had been œdematous for a long time, and he had shown symptoms of pulmonary œdema, which of late had become more pronounced. No valvular murmur was ever made out. Patient on entrance weighed 73 kilograms. He gradually lost flesh, at one time weighing 55 kilograms. At the time of his death he weighed 58 kilograms. Since April 1, 1900, patient had been suffering from extreme dyspnœa, which at times amounted to orthopnœa. He also complained of attacks of choking. On October 6 his pulse was very rapid and weak and the œdema of his feet was greater than usual. October 7, œdema of feet increased; rapid, shallow breathing; some cyanosis of extremities. October 11, complaining of diarrhea. October 13, diarrhea somewhat better; patient got no rest at night on account of choking and difficulty in breathing. October 14, patient feeling very badly; attempted to get out of bed and fell on the floor; toward night became rapidly weaker, respiration became slow and labored. Later he had two convulsions, remaining unconscious for several hours, and finally expired from exhaustion at about 2 a. m. on October 15.

Treatment.—The patient was given cod-liver oil, maltine, and whisky for a time, with creosote in increasing doses. His bowels were controlled with paregoric and bismuth subnitrate. His cough was relieved by sedatives. The last few months the treatment was palliative, consisting of whisky and morphine hypodermically. The temperature chart presents no feature of interest.

Necropsy (*twelve hours after death*).—Body that of a poorly developed, poorly nourished, white, adult male. Cadaveric lividity slight, post-mortem rigidity fairly well marked. Feet œdematous, and two small bed sores over sacrum. Paniculus adiposus very scanty and dark in color. Abdominal cavity contains 600 c. c. of dark-yellow, turbid fluid. Anterior mediastinal fat very scanty and glands slightly enlarged. Pericardium contains 600 c. c. of turbid, milky fluid, somewhat purulent in character. Both parietal and visceral layers are greatly thickened and covered by an immense deposit of fibrin. The two layers are strongly adherent on left side near base of heart. Heart: Weight, 400 grams; covered with a heavy, closely adherent layer of yellow fibrin. Aortic and pulmonary valves support a column of water and appear normal. Mitral and tricuspid valves show a few atheromatous patches. The heart muscle is dark red in color and the right and left ventricles contain lardaceous clots. The thickness of the walls and the size of the cavities appear about normal. Pleura: The pleural cavities both contain a small quanty of gas, demonstrated by puncturing diaphragm from abdominal cavity beneath the level of the fluid in same. The left pleural cavity contains about 100 c. c. of fluid. Apex and upper lobe of lung adhere to chest wall with strong adhesions at the bottom of the anterior border. Right pleural cavity obliterated by adhesions over entire surface of lung, those at apex being very firm, while those over the remainder of the lung are easily torn apart. Left lung: Weight, 782 grams; rather enlarged, some emphysema along the free border. Apex is studded with tubercles and contains one small cavity.

Remainder of the lung is congested and œdematous: has several small cavities and hard, fibrous tubercules here and there. Right lung: Apex contains a large cavity; bronchi are congested and the bronchial glands enlarged. The remainder of the lung is in a condition similar to left. Abdominal cavity contains 600 c. c. of dark-yellow, turbid fluid. Omentum very scantily supplied with fat. Liver: Weight, 1,786 grams; outer surface normal, somewhat purple in color; cut surface purplish-brown in color, with a few yellowish-white pinhead nodules scattered over it. Gall bladder filled with dark-yellow bile: ducts patulous. Left kidney: Weight, 160 grams: perinephritic fat scanty: nothing abnormal on surface; capsule strips easily; cut surface shows cortical portion about 1 cm. in thickness; the medullary rays are quite distinct and cortical substance of normal color. The malpighian pyramids appear quite normal. There are two small cysts in the cortex and a small white spot in one pyramid. Right kidney: Weight, 140 grams: nothing abnormal on surface: capsule strips readily; section shows dark-purple color; cortex thickened and mottled, medullary rays and malpighian pyramids very indistinct. Spleen: Weight, 312 grams; size, 15 cm. long, 12 cm. wide, 7 cm. thick; quite firm in consistency; cut surface dark-purple in color, with trabecular and malpighian bodies visible. Intestines: Congested throughout, and shows many cicatrices of old ulcers, with many recent ones scattered throughout both large and small intestines. No adhesions. Mesenteric glands enlarged. Brain: Dura mater appears normal; excess of fluid in subdural space: a few adhesions over the frontal lobe. Otherwise the brain is normal.

Microscopic report.—Pericardium: This, as a whole, is very much thickened and shows an immense deposit of fibrin. Nearest the heart it consists of fibrous tissue, cells, and newly formed capillaries, thus being thoroughly organized and evidently chronic. The capillaries do not extend to the free surface, and here there are only a few cells interspersed through the fibrin, which is of later origin. At one portion is seen what, with other evidences, appears to be a tubercle. It consists of a well-circumscribed collection of epithelioid cells, lymphocytes, and connective-tissue cells in a stroma of dense fibrous tissue. Several well-defined giant cells are seen in other portions of the pericardium. Heart: The section shows a moderate amount of congestion. The cells are quite indistinct, but the nuclei appear well stained. The cross striations can not be made out. The cells in various places show a deposit of small brown pigment granules, indicative of brown atrophy. Lungs: Conglomerations of tubercles are seen in various fields, consisting of fibrous tissue, epithelioid cells, lymphocytes, and giant cells. Some of these show marked evidence of caseation, and consist of broken-down cells and nuclear débris. The remaining alveoli are dilated and emphysematous. Their walls are somewhat thickened. The bronchi are hyperæmic and in places greatly thickened. Kidneys: Both kidneys show congestion, one a great deal more than the other. The cortical portion shows at places a proliferation of connective tissue extending down as trabeculæ from the capsule, and consisting of connective-tissue cells, lymphocytes, and epithelioid cells. The section shows an immense number of lymphocytes throughout. The Malpighian bodies are in places greatly congested. The convoluted tubules over most of the field appear quite normal, but in portions there is an increase of interstitial tissue and beginning degeneration of the parenchyma cells. The conducting tubules are normal. Spleen: The trabeculæ appear greatly thickened all over the section. The Malpighian bodies are enlarged, and a few of them show hyaline degeneration. The capsule shows an increased number of connective-tissue cells. The blood vessels show thickening of the intima and adventitia. There is some slight pigmentation of the parenchyma cells. Liver: This appears normal, with the exception of a slight congestion and a beginning cyanotic atrophy.

A. M. M.
J. M. G.

Tubercle of lung and cancer of stomach.

J. T.; age, 55 years; nativity, New York; admitted to Marine-Hospital Sanitarium, Fort Stanton, N. Mex., March 17, 1900; died September 11, 1900.

The following is taken from clinical notes furnished from St. Louis:

"*History.*—Family history, negative; was a drinking man until eighteen months ago. Present trouble dates back to two weeks, which began with sour stomach and nausea after eating, though sometimes felt all right. Appetite good; can eat anything. Coffee seemed to hurt patient. Never vomited any blood. Pains radiate at times all over abdomen. A localized tenderness, which patient feels, lies in meeting lines 2 inches below the xiphoid appendix. Bowels moved twice a day. Has been losing weight. Appetite and pain capricious. Belches up sour gas. Ordinary diet. Soda bicarb., oxalate cerium.

“*February 27.*—Abdominal pulsation about epigastrium not expansive (no tumor); not so well marked on putting patient in knee chest position. Dullness on percussion over pulsatory area. Systolic accentuation of heart appeared at apex, not transmitted. Lungs normal. Pepsin prescribed. Veins of abdominal wall slightly dilated. pulsation very marked on palpation over aorta, midway between ensiform cartilage and the umbilicus; no pain on pressure.

“*February 29.*—Had slight cough.

“*January 3.*—Weight the same.

“*January 4.*—Small nodule felt on palpation. over spot where pulsations are evident.

“W. G. S.”

Condition when admitted to Fort Stanton: Chest at rest, 37½ inches: inhalation, 38½: expiration. 36½; manometer. 35, each hand: skin dry. Palpation: Increased vocal fremitus in upper part of right lung. Percussion: No dullness over abdomen; liver and spleen apparently normal. Auscultation: Mucus râles in both apices, especially right: also marked in posterior parts of both lungs, near the inferior angle of scapula: well marked in lower portions of right lung. Roughened respiration in upper parts of both lungs. Heart: Normal as to size and position.

March 27.—Examination of abdomen revealed a semifluctuating tumor, about 6 by 2½ inches, situated in the left hypochondriac and epigastric regions. Its upper portion appears to be behind the transverse colon, and its lower portion gives a flat percussion sound.

When the patient was admitted to Fort Stanton he described his symptoms in such a way that it confused us on the diagnosis. He said the tumor would disappear at times entirely, and later on we found this to be correct, for at times the tumor could not be located and at other times it would be found in different portions of the abdominal cavity. In looking back at the case now it seems absurd that a correct diagnosis was not made, and yet the operator absolutely failed. We tried the test breakfast, but in introducing the tube to draw off the contents of the stomach it caused him such fearful distress that we had to desist. The case was watched carefully, but the man gradually ran down. We had no operating room or place suitable to perform an operation on him at first. As soon as a place could be prepared for the operation, an exploratory incision was made, and the diagnosis of an annular carcinoma of the pyloric end of the stomach was confirmed, and this will be described later on. It will be seen from the clinical notes taken at St. Louis that the officers there thought the tumor to be one of tuberculosis. I had thought that the tumor was possibly a mass of glands which at times would close the stomach. and gas forming in the stomach would force it up above the colon and give us this fluctuating tumor. which probably the very next day would be gone. The explanation of this was correct, so far as the mechanical cause of the disappearing tumor is concerned. He never vomited any blood or shreds. nor was there anything in the vomited contents to lead one to make a diagnosis of cancer of the stomach. There was only the symptom of vomiting about a half hour after meals (and this was not a regular symptom) to lead us to suspect that the growth was cancer. A diagnosis of cancer of the stomach was made about two weeks before the man's death. He was so informed, and the necessary procedure was explained to him. The operation was merely an exploratory incision. It was found that the cancerous growth involved the pyloric end of the stomach and had spread across to the adjacent liver and pancreas and also involved the duodenum. I started to make an anastamoses between the ileum and the stomach, but when I began to introduce the suture in the stomach the tissure was so friable that the suture would not hold, and therefore I could not make the Murphy button stay. The opening made in the stomach was closed with silk purse-string suture and the external wound closed with drainage. During the operation the patient had a very severe fit of vomiting, and he aspirated a considerable amount of fluid. There was considerable shock, and he was given large doses of strychnine, but only lived about three and a half hours after the operation.

Necropsy (*nineteen hours after death*).—The calvarium removed. With the exception of slight adhesion of the dura to the calvarium and some softening of the brain there was nothing abnormal inside of the skull. The lungs were removed and examined with great interest. for we were very anxious to see what had been the outcome of the tuberculous process in the presence of an intercurrent disease. It is probable that this patient had cancer first and afterwards contracted tuberculosis, which seems to be clearly shown in the clinical notes from St. Louis. At first we were unable to demonstrate the bacilli in this man's sputum, and when they were found they were few in numbers and stained very faintly. During his stay at the sanitarium his cough had almost disappeared and he only raised a slight amount of mucus in the mornings. The lungs were infiltrated with carbon dust, showing that the man had been a fireman, and there were pleuritic adhesion bands on both sides; otherwise the play of the lungs was free and normal. These pleuritic bands were of great interest to us. They had pulled out into round cords, and some of them were 6 and 8 inches long, and they did not restrict the movement of the lungs at all. The bronchial glands were hard and indurated and contained deposits of coal dust. We did not mount sections from the glands, as they seemed to be typically tuberculous. In the right lung was found a small cavity, with wide bands of connective tissue running through in several directions. This cavity contained some purulent matter, and was probably the source of the small amount of sputum and the slight cough. This cavity was nearly healed. There were two other small tubercular deposits which were entirely encapsulated. In the left lung there were two small deposits also encapsulated. There was a small portion of the apex of the left lung which was cup-shaped from the outside, and, in going into it, it was found to be a mass of connective tissue. This was probably a healed tubercle cavity. We were also able to locate the other cavity mentioned in the right lung merely by this cupping in of the lung tissue, showing where the connective-tissue bands had contracted into scar tissue, inverting, as it were, the outside portion of the lung. Aside from the conditions mentioned, the lungs were perfectly normal. We found in the bronchioles and bronchi and the trachea considerable dark fluid, which had been aspirated during the vomiting spell while under anæsthesia. The heart and great blood vessels were normal. On opening the abdomen, small, hard, pearl-like bodies were noticed, studding the peritoneum in considerable numbers. They did not feel to the touch like tubercles, and they also had a whitish appearance. In the great omentum there were several indurated glands. The liver, stomach, duodenum, and pancreas, were one agglutinated mass and had to be dissected apart. The walls of the stomach were very thin and could be easily torn with the fingers. The purse-string suture inserted during the operation had held. In the dependent portion of the stomach there was a large ulceration which had nearly eroded the entire thickness of the stomach wall, the peritoneum being the only remaining portion. The cancer was of annular form, filling in the entire pyloric end of the stomach to a thickness of about one-third of an inch. A small rubber catheter could not have been passed through the pylorus, and, besides, the canal was very tortuous. The upper portion of the pylorus was infiltrated, and the gall bladder was almost entirely obliterated by the deposit, except the greater extremity, which contained six small gallstones. The cancer had only infiltrated the liver superficially and had not invaded the deep structure. The head of the pancreas was badly involved. The spleen was slightly enlarged, and the suprarenal capsules were indurated.

Microscopical examination.—The sections of the tumor were found to be scirrhous.

J. O. C.

Tubercle of the lungs.

E. W.; age, 35; nativity, Illinois; admitted to the United States Marine Hospital, Chicago, Ill., September 1, 1900, and died October 23, 1900.

History.—Father died of influenza; mother died of asthma. Two sisters died of bronchitis, and one brother as the result of an accident. The only previous illness which patient has had was malaria a few years ago. Present illness is of about one year's duration. It began with cough, which gradually increased in severity. One month ago, during a paroxysm, patient had a hemorrhage. At first bright red blood was expectorated, later dark clotted masses in considerable quantity were expelled. At present patient is weak and emaciated, has hard coughing spells, and sometimes vomits after eating; he also has anorexia, night sweats, and evening rise of temperature. Bowels are constipated. Physical examination: Defective expansion, but increased vocal fremitus over right lung; dullness over right upper lobe, more marked anteriorly; on auscultation whispered pectoriloquy and tubular expiratory breathing over upper right lobe anteriorly. Below this the sounds are distant. Tubular breathing over left upper lobe anteriorly, and posteriorly; crepitant râles heard below eighth rib posteriorly on the left side. Body shows a marked degree of emaciation. General condition is bad. Tubercle bacilla present in sputum in abundance. Treatment was purely symptomatic. The disease progressed quite rapidly, patient being confined to bed in a short time, and had attacks of diarrhea and vomiting. Sweat profusely at night much of the time and had a harassing cough with free expectoration. Patient's weight shortly after admission was but 107 pounds. The temperature ranged from 37° to 40° C., and occasional rigors indicated further the coexistance of a mixed infection. Œdema of the ankles, hoarseness, and weakness of the voice, and marked general debility developed as the disease progressed, and patient died slowly of exhaustion.

Necropsy (eighteen hours after death).—Body that of an adult white male, of medium stature, extremely emaciated; post-mortem rigidity present; post-mortem staining irregularly distributed in patches over pendent portions of the body. On anterior surface of abdomen are dark subcutaneous spots, resembling patechia, arranged in wide bands extending in various directions. On making the median incision the subcutaneous fat was found lacking. The abdominal cavity contained 500 c. c. of clear serum. Chest firm; extensive pleuritic adhesions on both sides. Lungs pigmented on the surface, and degenerated in the interior to such an extent as to preclude their removal intact; the apices were excavated, and the right upper lobe honeycomed; all of both organs were the seat of tubercular infiltration excepting the extreme bases, which showed hypostatic engorgement. Heart: Pericardium contained 200 c. c. of straw-colored fluid; organ small; weight, 189 grams; valves normal; aorta atheromatous. The kidney showed a strange anomaly. Both organs were united in one by a connecting pons of kidney-like structure, devoid, however, of the pyramidal part; they formed a horseshoe or semilunar curve across the upper portion of the abdomen, the individual organs being situated obliquely; their combined length was 34 cm.; weight, 320 grams. The organs did not seem to be the seat of any pathological change other than a right-sided pyelitis with dilitation and accumulation of pus. The liver weighed 1,420 grams; was firm, hard, coarsely granular, hobnailed, cirrhotic, and in places fatty; it showed enormous increase in the interstitial connective tissue. The gall bladder was filled with fluid; ducts patulous. The spleen weighed 320 grams; was large, soft, flabby, dark, and friable on section; pancreas, weight, 80 grams, normal. The intestines, as inspected in situ, showed evidence of ulceration within. Scattered along the ileum were dark, hard, nodular areas, visible through serous coat. The mesenteric glands formed tumor-like masses in the abdomen tubercular caseation. On incising the intestines the characteristic tubercular ulceration was revealed in various stages, mostly advanced. The edges of the ulcers had the characteristic worm-eaten appearance. Other abdominal viscera showed no macroscopic changes. Brain not examined.

F. J. T.
H. W. S.

J. P.; age, 38 years; nativity, Sweden; admitted to United States Marine-Hospital Sanitarium, Fort Stanton, N. Mex., May 14; died September 6, 1900.

History.—Following was taken from clinical notes from the Marine Hospital at San Francisco:

"Admitted to United States Marine Hospital, San Francisco, Cal., January 9, 1900, when the following history was obtained:

"*Family history.*—Father dead, accidental. Brothers and sisters alive and well.

"*Previous history.*—Had the diseases of childhood. Enteric fever five years ago. Denies all venereal history. Was in this hospital in November, 1899. Diagnosis: Pleurisy; acute; left.

"*Present illness.*—Complains of pain in lower part of right chest, stabbing in character and increasing on deep inspiration and coughing; duration, four days. Sleep is poor. Dyspnœa, night sweats, constipated, losing in weight and in strength.

"*Examination.*—Right side of chest is slightly bulging.

"*January 10.*—Right side of chest strapped.

"*January 13.*—Pain in chest improved; likewise cough. Has pain in left ear, and has had a discharge from it for some time. Examination shows a purulent otitis media.

"*January 26.*—Physical examination shows a depression below each clavicle; dullness below left, extending to second interspace. Right lower chest dull. Palpation: Increased vocal fremitus over left upper lobe; absence of fremitus over right lower lobe. Auscultation: Sound, pleuritic friction; murmur in right axillary line extending upward from base; cogwheel respiration at left apex. Heart normal. Left lung dull at base. Positive absence of respiratory murmur at left base.

"*February 6.*—Weighs same as on admission, 159 pounds.

"*February 16.*—Physical examination shows left apex and right base dull. Bronchial breathing and subcrepitant râles heard at left apex.

"*February 20.*—After repeated examinations tubercle bacilli found. Temperature had ranged from 37 to 38.5.

"*March 2.*—Discharged improved. Readmitted for tubercle.

"*March 3.*—Examination shows on inspection: Expansion of chest fairly good, right better. Palpation—vocal fremitus normal. Percussion—slight dullness of left lung posteriorly at base. Auscultation: Respiratory sound exaggerated over right chest, suppressed over left lung posteriorly at base; vocal resonance diminished over left lung at base posteriorly.

"*March 4.*—Some swelling of right epididymis.

"*March 10.*—Swelling of epididymis and testicle continues; now decided enlargement; quite painful.

"*March 15.*—Swelling somewhat increased in size and more painful; pain is also prolonged along cord.

"*March 19.*—Pain and swelling less marked. Patient weighs 163 pounds.

"*March 23.*—Passed two or three yellowish bodies, the size of a pea, by urethra. Aspiration with hypodermic over fluctuating point gives a small amount of bloody effusion, but no tubercle bacilli found in it.

March 27.—Abscess pointing at upper end of testicle opened and about 10 c.c. of pus obtained.

"*March 28.*—Tubercle bacilli found in pus from testicle.

"*April 1.*—Testicle remains enlarged and pus is discharged from sinus in testicle.

"*April 9.*—Testicle removed (chloroform anæsthesia). Pus and caseous material found in epididymis; testicular substance riddled with tubercles. Gauze drain inserted.

"*April 20.*—There has been some discharge of pus, but the wound is now granulating nicely.

"*April 30.*—Is still troubled with deficient hearing and discharge from left ear.

"*May 7.*—Patient is well nourished; coughs but little; temperature has been normal for several weeks.

"J. M. G."

Condition when admitted to the sanitarium was as follows:

June 26.—Physical examination: Inspection shows full chest, typical nails and gums, movements of chest even, skin in good condition. Palpation—vocal fremitus nearly absent in bases of both lungs to above level of nipples. Percussion—no positive dullness can be demonstrated in left apex, as clinical sheet from San Francisco mentions; marked dullness in bases of both lungs to about level of nipples. Auscultation—vesicular murmur very faint in lower half of each lung, anterior; posteriorly, bronchial breathing at base of right and cogwheel respiration at base of left; roughened breathing in the other portion of both lungs; heart apparently normal in all respects.

From the very start this patient complained of severe and persistent headaches (frontal), which later on became general. He was always dull and stupid and inclined to be filthy in his habits, and he probably swallowed the sputum from time to time. On July 21 examination was made of left ear, and it was found that the eardrum had been previously destroyed. The headache at this time was very severe, and careful watch was kept over the mastoids, thinking that the headaches might be caused from mastoid disease. On July 24, after several chills, with high temperature, he was found to have a large tubercular pneumonia at the base of the left lung. This condition seemed to grow worse. On August 22 tubercular pneumonia developed in base of right lung. At this time the man became very sick; was delirious and hard to control; did not respond to stimulation. The fever gradually subsided and the temperature ran subnormal to the day of his death. Died from exhaustion.

Necropsy (*eighteen hours after death*).—Rigor mortis marked; body well nourished; no scars except in scrotum, showing where testicle had been removed at previous operation. The calvarium was removed, and the dura was found adherent in several places, especially along the longitudinal sinus. Near the sinus were abscesses which were cut into, but unfortunately none of the pus was secured for microscopical examination. Near the longitudinal sinus the dura was also adherent to the arachnoid, and the arachnoid and pia were firmly bound down to the brain throughout. The arachnoid was enormously distended with a clear white serum which contained a few flocculi. The blood vessels of the brain were distended to such an extent that it must have caused a certain amount of compression. It was noticed that the spinal canal was also greatly distended with this clear fluid. On turning the brain out and severing the spinal cord some of the fluid was collected on slides for microscopical examination. In section of the brain it was noticed that the tissue was congested and soft. The lateral ventricles and the third ventricle were distended with this clear fluid named above. The theca of the spinal column did not seem to be inflamed, though a careful examination was not made. as the spinal column was not opened except from above. The man had had no symptoms to indicate these severe brain lesions, except the delirium and the headaches. There was no paralysis of any kind. The thorax was opened. and the parietal layers of the pleuræ were found firmly adherent throughout. The lungs were firmly bound down and adherent to the diaphragm. The left lung showed, on microscopical section, to be one mass of miliary tubercles. However, the section would float in water, except a section from the lower portion, which partially sank. There were several small pus cavities shown in the original site of infection. The right lung had several small pus cavities in the apex showing original site of infection, and the other portion of this lung was infiltrated throughout with miliary tubercles. This condition was a typical tubercle pneumonia, and it is well to note that this condition can deceive one because the percussion note is not flat, as in lobar pneumonia. The bronchi and trachea were full of frothy mucus. In the right apex nature had originally intended to heal a tubercle cavity. The bronchial glands were enormously enlarged and very hard. The heart and pericardium and the great blood vessels were normal. The abdominal examination showed the mesentery and peritoneum studded with tubercles. There were several large glands in the mesentery of the omentum. The walls of the intestines in many places contained small white tubercles. which are very characteristic of general miliary tuberculosis. The stomach seemed to be normal. The liver was also infected and showed considerable scar tissue throughout its substance. Most of this scar tissue, however, was superficial and involved the liver capsule. The spleen was about twice its normal size and was pultaceous. The right kidney was much enlarged and was of the "hogback" variety. On section it was very much congested and there was pus in the pelvis. There were two cysts in the cortical substance just under the capsule. the capsule forming the outer covering. There were distinct tubercles under the capsules. and the tubercle lesion showed throughout the kidney substance on section. The left kidney was much larger and damaged worse. This kidney had only one cyst. The suprarenal capsules on both sides were very much enlarged, indurated, and undoubtedly infected with tubercles. This condition will be reported on further under microscopical examination. The bladder was half full of urine, a specimen of which was drawn off and gave the characteristic diazo test and showed marked traces of indican and albumin. The right testicle had been removed, and there was still a small sinus leading down to an old tubercle sac which had not healed.

Microscopical examination.—Tubercle bacilli were found in the arachnoid fluid, in the mesenteric glands, in sections of lung tissue, and in sections of the suprarenal capsules, the latter being very badly infected.

J. O. C.

G. J.; age, 38 years; nativity, Russia; was admitted to the United States Marine Hospital, port of San Francisco, Cal., October 20, and died November 16, 1900.

History.—The patient entered the hospital complaining mostly of cough and severe uncontrollable diarrhœa. The latter seemed to him of much more moment than the former; and though his lung involvement was very extensive, he did not for a moment suspect that those organs were at fault, but explained to the admitting officer that he thought he was suffering from some form of dysentery. He had been ill in all about a year, his ailment commencing with the cough and expectoration, while the diarrhœa had been existent only three months. He was emaciated and asthenic in the extreme, and could barely support the weight of his body upon his limbs. He was very dyspnœic, even without exertion, but despite the advanced stage of his disease he had never sweated at night.

Physical examination.—The right infraclavicular region sunken and almost motionless on respiration. The vocal fremitus was greater on the right side. On percussion a peculiar tympanitic dullness was elicited over the right apex anteriorily and posteriorily, while on listening with the stethoscope over this region one heard bronchial breathing, fine moist, and high-pitched, sonorous râles. The same signs were present to a lesser extent over the left apex. The other thoracic organs were found to be normal. Examination of the sputum and stools showed them to be teeming with tubercular organisms. Under medication the diarrhea subsided a very little, but not sufficiently for the patient to rest with any degree of comfort. He gradually grew weaker and weaker, and lost continually in weight. On the 2d day of November the patient was too weak to rise from his bed, and there he remained till he died from sheer exhaustion on the 16th of November at 8 p. m.

Necropsy (*twelve and a half hours after death*).—Shows the body of a poorly developed, poorly nourished, adult, white male, about 1.6 meters high and weighing 47 kilograms. Rigor mortis has entirely disappeared in the upper limbs and is very slight in the nether limbs. Hypostasis is very slight. A few scars, circular or oval in shape, are present over each knee. No œdema is present. The subcutaneous fat is almost entirely absent, the small amount present being very dark in color. The superficial lymphatic glands are not enlarged, with the exception of the two highest anterior cervicals. The abdominal cavity contains about 1.000 c. c. of clear serous fluid. The omentum is almost devoid of fat, but is otherwise normal. The anterior mediastinum is normal, except that it contains a few tubercular glands. The pericardial cavity contains about 50 c. c. of clear serous fluid, but is otherwise normal. The right pleural cavity is entirely obliterated by stringy adhesions. These are especially dense and firm over the right apex. The left pleural cavity is almost in the same condition, except that the apex of the lung is almost entirely free of adhesions. The right lung can not be removed because of the dense, firm adhesions which bind it to the thoracic wall. Its surface is nodular with tubercles. The apex is entirely consolidated, and on section is found to contain a large sinuous cavity, which is filled with a greenish creamy pus. The left lung weighs 760 grams. Its apex is almost entirely consolidated, as is also its base anteriorly. Posteriorly it is crepitant and emphysematous. The bronchial glands are enlarged. The cut surface is studded with tubercles, some showing peripheric masses of pigmented scar tissue. The tendency to breaking down is more marked at the center of the lung than at the base. The heart weighs 190 grams. It is small and pale and shows on the anterior surface of its pericardium an irregular white milk spot 5 cm. in diameter. Its apex is made up entirely of the left ventricle. The aorta is small and elastic and shows a few thickened spots on its intima. The left ventricle contains one lardaceous clot. Its muscle is pale and flabby. The aortic valves are normal, as are also the mitral, except that they show a few patches of sclerotic thickening. The right ventricle is thin and flabby and contains also one lardaceous clot. The pulmonic and tricuspid valves are normal. The right auricle is slightly dilated. The liver weighs 1,250 grams It is small in size. Its outer surface presents nothing abnormal. Its cut surface shows the center of the liver lobules to be somewhat depressed and purple in color. The pancreas is normal. The spleen weighs 150 grams. Its outer surface presents no abnormality except a few white thickened spots on the capsule. Its dimensions are 13.2 cm. long by 8.2 cm. wide by 3.8 cm. thick. Its consistency is normal. Its cut surface is dark reddish-gray in color. The trabeculæ and Malpighian bodies are quite distinct. The right kidney weighs 175 grams. It is quite small. Perinephritic fat is almost entirely wanting. The capsule is very adherent over its anterior portion. The outer surface is pale and fairly smooth. A small stellate depression, red at the bottom, is seen on its convex border. The cortex is thin and fairly translucent. The pelvis of the kidney is normal. except that it is devoid of fat. The consistency of the kidney is firm. The left kidney weighs 173 grams. Its capsule strips with some difficulty. Its outer surface is very finely granular; otherwise it is similar in all respects to its fellow. The stomach is small. Its mucous membrane is pale. There are some adhesions between this organ and the transverse colon. The intestines are moist and almost collapsed. Their mucosa is dotted with shallow oval ulcers, whose long diameter runs parallel to the transverse diameter of the bowel. The mesenteric glands are enlarged and caseated. The dura and pia maters are normal. The subpial fluid, however, is very excessive in amount and elevates the pia mater considerably from the surface of the brain. The fluid is clear and serous. The brain weighs 1,400 grams. Its cut surface is slightly œdematous, but otherwise shows no abnormality. The cause of death is exhaustion incident upon tubercle of the lung and the bowel.

M. E. L
J. M. G.

Microscopic report.—Lung: The specimen is almost entirely consolidated and consists of illy defined necrotic areas, with peripheric masses of lymphocytes and epithelioid cells. Giant cells are present, but not in very large numbers. The surrounding lung is hyperæmic. Liver: Upon examination with the low power objective, the center of each lobule presents a brown appearance. More minute examination shows this to be due to the fact that the cells in the center of the lobules are filled with fine, brown granular pigment; otherwise the liver is normal. Pancreas is normal. Kidney: At regular intervals beneath the capsule are small triangular areas in which the interstitial connective tissue is hypertrophic and the tubules atrophic. Between these areas the tubules are large and apparently dilated but otherwise normal. The remaining parenchyma presents no abnormality. Here and there one may see a dilated tubule or a small cyst containing coagulated fluid, and here and there a tubule containing a hyaline cast. The Malpighian bodies are small and shrunken from their capsule. Spleen: Capsule slightly thick and dense, otherwise normal. Trabeculæ in like condition. Malpighian bodies are irregular in outline and closely packed. The Malpighian arteries show a thickening of the intima. Pulp is hyperæmic. The cells are mostly lymphocytes and spleen cells. Fibroblasts, plasma cells, and polymorphonuclears are comparatively few. In the pulp there may be seen a few small necrotic areas surrounded by a zone of lymphocytes and epithelioid cells. No giant cells are visible.

M. E. L.
J. M. G.

Tubercle of lung—pneumothorax.

N. T.; age, 31; nativity, Russia; admitted to Providence Hospital, Seattle, Wash., September 18, 1900; died November 7, 1900.

History.—Patient stated that three weeks previously he had fallen down a stairway, at which time he experienced a severe pain in left side over lower part of chest. This pain was still present when application was made for treatment. This and the dyspnœa on exertion were the only things of which he complained, but on questioning him he admitted that for three months previous to his fall he had been troubled much with a cough.

Examination showed the patient to be somewhat emaciated and quite weak. There was immobility of the left side of chest, with obliteration of the intercostal spaces; the breath sounds over this side were almost inaudible; tactile fremitus was absent. Apex beat of heart was displaced to the right of sternum; percussion elicited a tympanitic resonance over entire left side of chest; the coin sound was very characteristic: there were no evidences of the presence of fluid when admitted to the hospital, but this gradually accumulated when succussion produced a sound very like that heard when a closed cask containing but a small quantity of fluid is shaken. Examination of right lung showed tubercular involvement of the apex. Temperature on admission was 39.2 C., pulse 106, and respiration 18, and at no time during the course of the disease was the rapidity of respiration much increased. There was also an almost complete anæsthesia of the skin over lower part of left side of the chest. An uncontrollable diarrhea set in soon after his admission to the hospital, which greatly weakened the patient. Treatment was symptomatic, and stimulation and aspiration were twice performed, 750 c. c. of frothy sero-purulent fluid being withdrawn without benefit to the patient and with no change in the tympanitic quality of the percussion sound. The patient grew gradually weaker, and died November 7, 1900.

Necropsy (*eight hours after death*).—Body that of a white male about 30 years of age and very poorly nourished; post-mortem rigidity and discoloration were slight. Upon opening the chest a large quantity of foul air escaped from the left pleural cavity; left lung was compressed into a solid mass against the upper and posterior portion of chest wall and was adherent to same. A large cavity was found in the upper lobe which communicated with the pleural cavity. There was a considerable quantity of sero-purulent fluid in the dependent portion of pleural cavity. The left side of diaphragm was pushed downward by the accumulation of air and fluid. The right lung was the seat of a large cavity near the apex and was disseminated throughout with tubercular nodules. The heart was displaced to the right of middle line, but was otherwise normal. Liver and spleen were apparently normal. The small intestines were much congested, and many ulcers were present. The mesenteric glands were enlarged, and many had undergone caseation. The other organs were apparently normal.

D. E. R.

Tubercle of lungs.

A. McD.; age, 47 years; nativity, Norway; admitted to the United States Marine Hospital, Boston, Mass., December 1, 1897; died December 7, 1900.

History.—The patient gave history of cough, expectoration, loss of appetite, and loss of weight; there were evidences of tubercular infection of both lungs, the process being more advanced in the right and progressed more rapidly in that lung. An examination of sputum showed the tubercle bacilli present in abundance; toward the close there was diarrhea of a very severe character. The disease followed the usual course, and the patient died from absorption of toxic products and exhaustion.

Necropsy (eighteen hours after death).—Greatly emaciated; rigor mortis marked; elbow, knee, hip, and vetebral joints ankylosed from rheumatism. Weight of heart, 275 grams; valves, cavities and walls apparently normal. Left lung bound down around apex and posteriorly by adhesions; anterior surface of right lung very closely bound to thoracic wall by dense adhesions; weight of lungs, left, 655 grams; of right, 1,075 grams. In apex of right lung there was a cavity of about 125 c. c. capacity; upper, middle, and lower lobes infiltrated by tubercle; in left lung only a small portion of diaphragmatic surface was free from tubercle; remainder contained cheesy masses. Liver normal; weight, 1,675 grams. Spleen normal; weight, 270 grams. Right kidney normal; weight, 160 grams; left kidney normal; weight, 180 grams. Stomach normal. Pancreas normal. Small and large intestines normal and empty; mesenteric glands indurated and enlarged. Brain was normal; weight, 1,150 grams.

F. I.

Miliary tuberculosis.

J. N.; age, 38 years; nativity, Ireland; admitted to the marine ward of St. Marys Hospital, Milwaukee, Wis., October 30; died November 9, 1900.

History.—Patient has had syphilis and one or two attacks of inflammatory rheumatism, the last occurring in the beginning of the present year. About three years ago he suffered from a severe attack of pleurisy of the right side. Present illness began two weeks before admission, and was marked by severe pain in both temporal regions with rigors, sweating, and prostration. Auscultation over the chest disclosed a blowing systolic murmur heard most distinctly over the apex and in the axilla. The pulse during his illness ranged from 50 to 56 per minute. The temperature, which was at first normal in the morning, became continuous on the third day and ranged from 38° to 39° C. There were at this time short periods of mental dullness or hebetude, which later became delirium with constant muscular movements. Under the influence of bromides and phenacetin the cephalalgia ceased to bother after the second day, but the patient gradually sank into a state of coma, from which he never rallied. Meningitis of some form was easily diagnosed after the second day, but of what nature, as regards the causative factor, was not fully determined.

Necropsy (eight hours after death).—Body of a muscular man fairly well-nourished. Rigor mortis not marked. Brain: Appearances everywhere seemed normal save on the inner aspect of the dural membrane in both temporal regions. Here were to be seen patches of minute elevations somewhat smaller than a millet seed, white in color, and disposed evenly over the surface. Degenerative changes, as shown by yellow discolorations, could not be detected by the unaided eye. A considerable quantity of serum was found on the base of the brain, some of it being in the lateral ventricles. Brain weighed 1,480 grams. Thorax: Heart pale and anæmic, size of the fist; an old fibrous patch showed over the right ventricle; valves are competent. Organ weighed 209 grams. The left lung was adherent to the thoracic wall at the apex by old adhesions. There is a soft caseous tubercle in the apex and a hard, gritty, calcareous one on the anterior surface of the middle lobe. This lung weighed 430 grams. On the right side the lung is bound in its containing cavity throughout most of its extent by adhesions. So firm and dense are these that pieces of the lung substance are pulled away with them. There are six or more caseous tubercles in as many situations; one or two are becoming cavernous; hypostatic congestion at the base; weight, 450 grams. Abdominal viscera normal.

R. B.

Tubercle—Broncho-pneumonia—Pleurisy, chronic.

O. M.; age, 27 years; nativity, Sweden; was admitted to the United States Marine Hospital, port of San Francisco, Cal., November 17, and died November 21, 1900, at 9.35 a. m.

History.—Patient complained of pain in left side of the chest, accompanied with cough and copious expectoration. Had been in ill-health for over two years, and had lost 10 kilograms during the last two months. He had been too weak to perform his regular work for some time past. His appetite had been very poor for a long time; bowels regular. Physical examination—lungs: Dullness over both apices, on percussion; on palpation, vocal fremitus was greater over the right apex; auscultation, bronchial breathing and moist râles over the right apex;

bronchial breathing and no râles over the left apex and lung. On day following admission the patient complained particularly of the pain in his left chest, which persisted. Upon examination dullness was elicited by percussion and vocal fremitus was absent, on palpation, showing presence of fluid in the left pleural cavity. The same day his sputum was examined and tubercle bacilli were found in large numbers. The patient was transferred to the tuberculosis ward, where he became delirious. He became dyspnoeic and expired at 9.35 a. m.

Treatment consisted of a palliative cough mixture, strapping of chest walls, and hypodermics of strychnine with nourishing diet.

Necropsy (*two and one-half hours after death*).—Body that of a fairly well-nourished adult male, almost 1.7 meters in height and weighing about 77.5 kilograms; has a scaly brown eruption upon the skin of the thorax. Hypostasis fairly well marked. Rigor mortis absent. On section the subcutaneous fat is scanty, and dark yellow in color. The left pleural cavity contains about 1,000 c. c. of serous fluid; numerous adhesions are present between the thoracic and visceral pleura. The left lung weighs 700 grams, is smaller in size than normal, being compressed by the above-mentioned fluid and held by very firm adhesions at its apex. The bronchial glands at the root of the lung are enlarged and pigmented, varying in size from a grain of wheat to that of a small cherry; they are hard and cut surface shows a mottling of gray and black. The cut surface of the left lung is œdematous at the base, slightly crepitant; of a grayish color, studded with small hard pigmented tubercles, varying in size from that of a millet seed to that of a pea. Both the upper and lower lobes are affected alike, with the exception that the apex has two cavities, varying in size from that of a bean to that of a cherry; each cavity is surrounded by cicatricial tissue-content mucu-purulent fluid. The cross-cut surfaces of the small bronchi are surrounded by evidences of a chronic broncho-pneumonia. The formation of new connective tissue between and surrounding the bronchioles is very extensive; it is also studded with small tubercles. Patches on the surface of the lung varying in size from a nickel to that of a dollar are covered with miliary tubercles. The right lung has numerous adhesions, binding its visceral pleura and self to the thoracic pleura and wall. It weighs 750 grams; its outer surface presents numerous patches of granulation tissue and patches of pigmentation. On section the bronchial glands at the root of the lung are enlarged, hard, and pigmented; the cut surface is studded with small tubercles from apex to base. The three lobes are firmly bound together with adhesions, presenting the characteristics of the left lung. Pericardium contains 100 c. c. of clear serous fluid. The heart weighs 315 grams, is pale, flabby, and has quite an amount of fat around its base. On section the right ventricle contains post mortem clot of blood; the tricuspid valve leaflets are apparently normal; the walls are found thinner by about one-third than normal and the muscular substance is pale and flabby. The mitral valves are pale and fatty, otherwise normal. Large blood vessels are normal. Abdomen: Peritoneal cavity contains no fluid. Omentum fat scanty. Fæcal matter in large intestine is hard; the intestines are distended with gas. Liver weighs 2 kilograms; on its upper surface are two small purple spots. The gall bladder is small and contains about 10 c. c. of thin yellowish-green bile. On section the lobules appear normal in the right lobe; the cut surface of the middle and left lobes have a nutmeg appearance. In the right lobe on the cut surface is seen a depression surrounded by scar tissue, about the size of a pea. Spleen weighs 190 grams, measures 8 by 6 by 3 cm. Outer surface is mottled, shriveled, and shows evidences of old adhesions to its capsule. Cut surface shows a formation of old interstitial tissue, denser in quantity than normal. Cut surface is purplish-gray; trabeculæ are plainly visible. The spleen shows here and there a recent tubercle. Stomach is smaller than normal. On section the mucous membrane is pale, covered with a thick viscous exudation and on close examination it shows signs of a chronic catarrrhal inflammation. Toward the pyloric orifice on the inside of anterior wall are two hæmorrhagic spots. Intestines: The veins are congested. The ileum, jejunum, and large intestines on section present ulcers, but the mucous membrane is pale and covered with a thick tenacious mucous exudation. The appendix vermiformis is apparently normal. A small constriction exists at the sigmoid flexure. Kidneys: Right weighs 200 grams, perinephritic fat is small in amount. On section the capsule strips with some difficulty, cortex is plainly marked and pale. Pelvis is normal. Left, weight 180 grams; some white areas on the outer surface. A small white cicatrical depression on its anterior face and a dark area on its superior surface. On section the capsule is adherent at several points. In the cortical portion, about the middle of the kidney, are the remains of two encapsulated abscesses, apparently tubercular, each 1.5 cm. in diameter. Bladder wall congested. Bladder full of urine, otherwise normal. Brain, weight

1,650 grams; congested at base, with 120 c. c. of clear thin serous fluid. On section the brain appears normal with the exception that the ventricles contain an abnormal amount of fluid (30 c. c.) and the color of the cerebellum is darker than usual. Spinal cord slightly congested and surrounded by abnormal amount of fluid in the subarachnoid space. Several adhesions exist between the piamater and duramater at the vertex of the cerebrum.

G. J. S.
J. M. G.

Tuberculosis, acute miliary.

P. McG.; age, 32; nativity, New York; admitted to United States Marine Hospital, Stapleton, Staten Island, November 26, 1900; died November 28, 1900.

Family history.—Father living and in good health; mother died in childbirth. Four sisters died of cholera. One brother was paralyzed, one died of pneumonia.

Past history.—Indefinite. Patient in a very weak condition and was not questioned closely as to condition of health previous to present illness. Drinks considerable. Said he was always well until the beginning of this month.

Present history.—Dates his present condition from November 8 of this year, when he was drinking to excess. Remained on a spree for several days. Appetite was poor; nauseated, especially in morning. Nervous, couldn't sleep; complained of pain in abdomen and diarrhea. Condition rapidly became worse and he entered hospital. On admission complained of nausea, anorexia, diarrhea, pains in abdomen, and weakness.

Examination.—Inspection: General appearance poor; emaciated; anæmic; sordes on teeth and lips; tongue coated heavily, dry and cracked. Clavicles prominent; expansion poor, abdomen flat. Palpation: Fremitus increased over apices of both lungs, especially right. Tenderness over large intestines, especially over descending colon. Gurgling in right iliac region. Liver felt below ribs. Percussion: Dullness over apices. Auscultation: Blowing breathing over both apices; subcrepitant and fine mucous râles over rest of lungs. Temperature slightly elevated; pulse 88; respiration 30. Has cough, with muco-purulent expectoration.

Treatment.—Milk diet, salol, lead, and opium pills.

November 27, 1900.—General condition worse; passed a poor night; bowels moved fifteen or twenty times; movements fluid in consistency, yellowish color, and large in amount. Temperature in morning 37.4; respiration 30; pulse 80. Slight cough, with muco-purulent expectoration in small quantity; pain in abdomen; weakness profound. Diarrhea continued unchecked; general condition about the same.

November 28.—Passed a poor night; soiled bed several times; diarrhea persists; movements liquid, light brown in color, and amount about 1 quart with each evacuation; has hectic flush; tongue coated; very little appetite. Temperature, 38.6; pulse rapid; respirations shallow; abdomen markedly tympanitic; pain along colon severe; tenderness over intestines; coughs but little, and not much expectoration. He says milk causes cramp-like pains in the stomach; stimulation prescribed. Found unconscious by nurse shortly after morning sick call, and he died at 11.20 a. m.

Necropsy (twenty-four hours after death).—Body of a male, apparently 40 years old; small stature, muscles poorly developed; amount of subcutaneous fat small; rigor mortis marked; suggillations in dependent parts of body. Anterior mediastinum normal. Remains of thymus gland not found. Pericardium in normal position; amount of fluid in pericardial sac about 50 c.c.; pericardial walls normal. Heart in normal position, weight 233 grams; left ventricle in systole, right in diastole and containing a considerable quantity of fluid blood. Myocardium of normal thickness, color, and consistency; not friable. Mitral orifice of normal size, competent to water test; valves normal; first 2 inches of aorta show beginning calcareous changes; coronary arteries patent; bicuspid orifice and valves normal; right auricle contains chicken-fat clot. Left pleura shows a few adhesions to base and apex of lung; otherwise normal. Left lung weighs 915 grams; lower lobe crepitates; upper feels hard and nodular; upper lobe floats; apex shows two small cavities filled with tubercular débris; rest of lobe shows numerous nodular, tubercular foci, and some serum exudes; lower lobe on cut section has bright-red appearance and is very rough, showing innumerable miliary tubercles. Right lung weighs 735 grams, floats and crepitates; external surface feels shotty; apex shows, on cut section, tubercle in advanced caseation; all lobes show diffuse miliary tubercles, and serum exudes from cut surfaces. Bronchial glands much enlarged and show advanced tubercular degeneration, with considerable calcareous deposits. Omentum adherent to peritoneum and intestines and markedly congested. Spleen slightly enlarged; weighs 225 grams: cut section shows some congestion; pulp friable. Right kidney weighs 248 grams; large. Section: Markings fairly distinct; much congested; cortex shows yellowish areas; medulla hard, firm, and feels fibrous. Left kidney weighs 257 grams; capsule nonadherent; gross findings as in the right. Bladder contained about 300 c. c. of clear urine; mucous membrane normal. Peritoneum: Many adhesions between abdominal viscera; peritoneum everywhere dotted with miliary tubercles. Duodenum normal. Orifice of gall ducts patent. Stomach normal. Jejunum and ileum externally congested. covered with miliary tubercles and adherent to surrounding tissues. Internally, jejunum shows two or three ulcers, with elevated edges and depressed centers, and of about 6.4 mm. diameter. Ileum contains similar ulcers, more numerous, especially near the ileo-cæcal valve, where they occupy nearly the whole lumen. Ulcers vary from 3.2 to 12.8 mm. in diameter; long diameter of these runs (as a rule) transversely with the gut; they are noninflammatory. Colon presents a few similar ulcers; external surface covered with miliary tubercles. Liver enlarged; weighs 2,450 grams; external surface covered with miliary tubercles; cuts hard; cut section has very yellowish color, showing advanced fatty degeneration. Pancreas normal.

J. M. K.
G. W. S.

Tubercle of lung.

J. B.: age, 36; nativity, Norway; admitted to the United States Marine Hospital, Baltimore, Md., November 23, 1900 (transferred from the United States Marine Hospital, Norfolk, Va.); died November 28, 1900, at 11.15 p. m.

Family history.—Father and mother dead, cause of death unknown; two brothers and five sisters, all living and well.

Personal history.—Had all the diseases that are usually incident to childhood. Previous to one year ago general health good; gives no history of venereal diseases.

Clinical history.—About one year ago patient developed a cough, rather mild and spasmodic in character, attended by slight expectoration which was occasionally tinged with blood. Cough gradually increased in severity, being more pronounced in the mornings, and associated with frequent chilly sensations and "night sweats." As the cough increased there was a gradual decline in body weight and strength. About two months ago cough became greatly exaggerated. expectoration very profuse. When admitted to the hospital, November 23, 1900, physical examination elicited all the characteristic signs and symptoms of advance tuberculosis of the lungs, and the diagnosis of this condition was made and verified by a microscopic examination of the sputum, which revealed the presence of tubercle bacilli. Patient died November 28, 1900, at 11.15 o'clock p. m.

Necropsy (*twelve hours after death*).—External appearance: Medium size; height 5 feet 7 inches: general nourishment poor; post-mortem lividity in all dependent parts; rigor-mortis well marked; pupils dilated and equal. Circulatory organs: Pericardial sac contained 180 c. c. of straw-colored fluid; the endothelial lining of sac was covered by a sero-fibrinous exudate which had undergone partial organization; the myocardium was also covered by an exudate of a similar nature. Here and there dense fibrous bands were observed to pass between the pericardium and the myocardium, being especially prominent at the base of the heart, and which limited the free movement of that organ. The sac was thicker than normal, and on the left side was adherent to the lung. Heart: Weighed 420 grams: slightly dilated; covered by a sero-fibrinous exudate, as above stated; coronary veins engorged. On section the valves were found competent; around the aortic orifice were noticed slight vegetative deposits; left ventricle slightly dilated and contained small antemortem clot. Right ventricle dilated and filled with a soft, dark clot. Aorta (thoracic and abdominal) normal. Respiratory organs: Nares normal; larynx was observed to be in a state of chronic inflammation, eroded patches of the mucous membrane noticed here and there, and one of considerable size was located near the attachment of the vocal cords, which were œdematous. The trachea and bronchial tubes presented a condition similar to that of the larynx. Lungs: Left weighed 775 grams; closely adherent to the thoracic wall and to the diaphragm, and likewise to the pericardium. So dense and firm were the adhesions it was necessary to lacerate the lung in order to effect its removal. On section several small cavities were observed, one of which, larger than the others, and situated near the apex, contained about 20 c. c. of sanguopurulent fluid. Throughout the substance of the lung were numerous tubercles in various stages of retrogression, ranging all the way from caseation to necrosis and cavity formation. Right lung weighed 1,145 grams; slight adhesions at the apex and base, but none elsewhere; venous engorgement general; no cavities, but many caseous masses. Abdomen and contents: Peritoneum revealed no evidence of tubercular or other involvement. Stomach distended with gas and contained about 150 c. c. of watery fluid, mixed with mucoid substance. Small intestine normal; mesenteric glands enlarged. Large intestine normal; vermiform appendix very rudimentary. Liver: Weighed 1,550 grams; normal; gall bladder moderately distended. Pancreas normal, weighed 63 grams. Spleen weighed 245 grams; firm in texture and of a dark color; transverse diameter almost as great as that of the longitudinal. Urinary organs: Kidneys—left weighed 190 grams; was marked by two fissures, one at either extremity and running transversely. These fissures gave to the organ a nodular appearance; capsule not adherent. Right weighed 160 grams; capsule not adherent. Bladder normal, contained about 50 c. c. of urine. Brain and membranes: Calvarium removed; dura mater normal; pia mater and arachnoid were congested, adhered one to the other, and in a few locations the pia mater was firmly attached to the convolutions of the cerebrum. The brain as a whole was anæmic; the sulci shallow, and the cortical gray matter extremely thin.

G. P.
W. C. B.

A. P.; age, 25; nativity, Norway; admitted to marine hospital at Savannah, Ga., March 16, 1900.

Clinical history, taken from notes of medical officer in command at Wilmington, N. C., viz:

"Family history negative. Personal history negative. Present sickness began about March, 1898, with cold. Has had cough ever since. Has lost 45 pounds in weight, and has become quite weak and short of breath on exertion. Physical examination March 16, 1899, showed emaciation, diminished expansion of right chest, increased vocal fremitus and resonance nearly all over chest, subcrepitant râles in left mammary and axillary regions, and cog-wheel respiration in left subclavicular region. Sputum examination showed a large number of tubercle bacilli. Since above date patient has had some night sweats and temperature ranging from 36° to 38° C. Subsequently gained in weight and cough moderated. December 1, 1899, patient was transferred to the marine hospital at Wilmington, N. C., where another examination revealed most of the above physical signs."

Admitted to Marine Hospital Sanitarium, Fort Stanton, N. Mex., December 26, 1899, and physical examination on that date showed the following:

Height, 5 feet 8 inches; weight, 125 pounds; blue eyes, light hair, blonde complexion. Clavicles prominent. Breathing mostly on left side. Chest sunken in at apex on right side. The apex and greater portion of lower and middle lobes badly infected and undergoing pneumonic infiltration. Think there are no adhesions. Very little tissue broken down. On left side there is a small focus of infection at apex. Heart weak and rapid, though otherwise normal. Coughs considerable and expectorates a great deal. Claims he has lost 45 pounds. His condition is fairly favorable, as he has one good lung and the other lung not being badly broken down. Appetite poor. Examination of sputum December 28 showed large numbers of typical tubercle bacilli, small in size. Typical temperature chart.

Subsequent history.—For some time after arrival the patient gained in every way until a severe cold was contracted, after which he began to retrograde. The sputum was examined many times and always contained large numbers of tubercle bacilli. The urine was also frequently examined and a strong Ehrlich diazo reaction always obtained. The percentage of hæmoglobin ranged from 80 to 95 up to August 15, the last time it was taken. During the last month the patient was much troubled with dyspnoea, which continually increased. About two weeks ago dropsy began to occur in the lower extremities, and later invaded the trunk and face. Death occurred October 11 at 12.50.

Necropsy (*twenty hours after death*).—Inspection of body: Emaciation; postmortem lividity and rigor mortis well marked. Calvarium removed: Meninges adherent to skull cap more than normal, and skull very thick posteriorly. Otherwise the cranial cavity and its contents were in normal condition. Thorax: The pleuræ of both lungs adherent to the pericardium and diaphragm. Visceral and parietal layers of both lungs adherent, more or less, all over, especially at apices. The left apex had a cavity of 7 or 8 ounces capacity; the right apex had another nearly as large; both were empty. Surrounding the cavities were extensive areas of consolidation. Both lungs were full of tubercles from apices to bases, there being hardly a cubic centimeter of wholly normal tissue anywhere. In the right lung were a few healed scars. Several enlarged bronchial glands were present in the anterior mediastinum. The pericardium was somewhat distended and contained several ounces of serous fluid. It was adherent in places to the pleuræ, and its visceral and parietal layers were partially adherent. The heart was considerably enlarged. The right ventricle was larger and its walls thicker than the left, and contained a large mass of vegetations below the tricuspid valve, the latter being incompetent to the water test, as was also the pulmonary semilunar valves. The left ventricle was normal, though the mitral valve was decidedly incompetent to the water test. The aortic semilunar valves were normal. Considering the obstructions existing in both lungs, the condition of the right ventricle, tricuspid and pulmonary valves is accounted for. The pulmonary artery was dilated, but otherwise the great blood vessels and nerves were normal. The thymus gland was not demonstrable. Abdomen: Liver slightly enlarged and congested. The capsule of the right kidney was adherent, and the line indistinct between the cortex and medulla. The gall bladder contained bile. The urinary bladder contained a small amount of urine. The stomach contained fluid and undigested food. The spleen, pancreas, suprarenals, left kidney, small intestines, large intestines, vermiform appendix, omentum, mesenteries, gall ducts, great blood vessels, and generative system were all in normal condition. The solar plexus was not dissected out, owing to lack of time.

C. R.
J. O. C.

P. M.; age, 54; nativity, Ireland; admitted to United States Marine-Hospital, Fort Stanton, N. Mex., June —, 1900; died December 11, 1900.

Previous history (*condensed from clinical notes of medical officer in command, San Francisco, Cal.*).—Family history negative. Personal history: Chills and fever several years ago; chancre, bubo, and ulcer on right leg; had gonorrhoea in 1899. Six years ago had "stomach troubles." Present sickness of ten months' duration. At outset cough, followed by free expectoration; anorexia; dyspnoea; loss of weight and pain in chest on coughing. Examination: Emaciation and poor expansion; more muscular effort on right side; flatness above clavicles and dullness below, involving right upper lobe; dullness all over right lung posteriorly; area of liver dullness increased; bronchial breathing in middle of right chest; harsh respiration over left chest, except apex, where murmur is absent; vocal fremitus increased in all dull areas, except left apex and right base, where there is no resonance; bronchophony below right clavicle; heart sounds accelerated and second is accentuated. May 1, examination shows right lung and left base dull, and apices involved. Aeration good only over left lung, anteriorly and centrally. Left lung shows moist râles and blowing respiration. A few moist râles in right lung, which for the most part seems obstructed. Tubercle bacilli in the sputum. Urinalysis negative. Repeated physical examinations show that the disease is progressing. Patient wants to be sent to Fort Stanton, N. Mex.

F. J. T.

Physical condition as noted on arrival at Fort Stanton was as follows: Typical chest, nails, and gums; right shoulder depressed; vocal fremitus increased over right lung, but diminished over left base; dullness in right upper lobe; liver area of dullness high; dullness in left apex and base; crackling râles all over right lung and a few in left apex; heart seemed normal; tubercle bacilli in the sputum; urinalysis showed a strong diazo reaction. This was a bad case from the start. Some transitory improvement seemed to take place in the general condition for a while, but, as was expected, he began to go down hill again. Ascites and œdema of the legs developed. Though the urine was frequently examined, nothing abnormal was observed except a very strong diazo reaction. Most obstinate constipation was experienced, it being almost impossible to move the bowels without large doses of hydragogue cathartics. As the patient was gradually losing ground, and his abdomen enormously distended, it was decided to make a button-hole opening and let out the fluid, which was done under chloroform anæsthesia. About 2 gallons of serous fluid was removed and a drain inserted in the wound. The patient recovered from the anæsthetic and felt quite good till after midnight, when he began to weaken very rapidly, dying at 2 a. m.

Necropsy (eight hours after death).—Inspection of body: Rigor mortis and post-mortem lividity; wound in abdomen from operation previous day; calvarium not removed. Thorax: Anterior mediastinum had several enlarged glands. Heart normal. Pericardium adherent to left lung. Right lung almost entirely consolidated. Left lung involved at apex, and with many small tubercles scattered throughout other portions; but the left lung still had considerable functional tissue remaining. Layers of right pleura adherent all over. The left pleura adherent to the pericardium partially. Arch of aorta was dilated. The other great vessels and nerve trunks normal. The diaphragm was adherent to the right lung. Abdomen: Omentum very thin, friable, and undergoing fatty degeneration. Spleen much enlarged and very anæmic. Kidneys small with capsules adherent in places, and line between cortex and medulla nearly obliterated. Suprarenal capsules could not be found. Urinary bladder empty. Organs of generation normal. Rectum in process of fatty and colloid degeneration. Duodenum normal. Stomach very anæmic, its mucous membrane almost white. Gall ducts and gall bladder normal. Liver small, anæmic, and granular, and infiltrated throughout with what appeared to be minute tubercles. Pancreas in a state of fatty degeneration. Mesentery thin, friable, and in process of fatty degeneration. Small and large intestines more or less glued together, owing to existence of a plastic peritonitis with exudation of lymph; large intestines undergoing fatty and colloid degeneration. Their walls were very thick and the muscular substance nearly gone, being replaced by large transparent masses of semisolid colloid material, each mass being surmounted by one or more fatty processes of conical shape. This remarkable condition of the large intestines, including the rectum, will account for the obstinate constipation experienced by the patient. The great vessels were normal. Between the stomach and spleen was a mass of distended veins.

Microscopical examination.—Stained sections of liver tissue demonstrated presence of fatty degeneration of the atrophic or wasted form of fatty liver.

C. R.
J. O. C.

Tuberculosis of spinal cord and syphilis secondary.

J. K.; age, 24 years; nativity, Louisiana; admitted to United States Marine Hospital, New Orleans, La., December 22, 1899, died August 26, 1900.

Family history.—The family history is vague; father died, the history states, of dysentery, though the relatives report that the cause of death was tuberculosis; mother died during childbirth; of a family of two brothers and five sisters only one brother is living; the other brother was killed by a railroad accident; the causes of death of the five sisters are not stated.

Personal history.—Ten years ago the patient had a fever, which was probably typhoid; seven years ago he had gonorrhœa, which was followed by buboes in both groins; shortly after the attack of gonorrhœa a sore developed on the penis, not followed by eruption. Patient states that the present condition began in December, 1899, as a girdle pain just below the umbilicus; this pain was scarcely noticeable at first, but gradually increased in severity; about three weeks later he began to have pains in the ankles; this pain spread upward, followed by paralysis; two weeks later, or, as the history states, five weeks after the inception of the attack, the patient became bedridden; anæsthesia of the skin of the legs began about this time and continued until it was complete; incontinence of feces, priapism, and bed sores are then noted on the history, the bed sores formed over the tuber ischii and sacrum; about the 1st of April of the present year the patient was turned on his face to relieve the pressure on the dependent sloughing parts; this brought the pressure on the knees, which first swelled and then broke down, eroding the joint and laying bare the femur several inches, the right knee being the worst; trophic gangrene also began on the toes and other dependent parts. During this time the legs assumed the type characteristic of spastic paraplegia. The patient gradually grew weaker, more emaciated, and died at 7.35 p. m., August 26, 1900.

Necropsy (eighteen hours after death).—Rigor mortis slight. Inspection showed body to be markedly emaciated; the legs are in the same condition as during life, i. e., crossed; there are large bedsores and cicatrices over the parts that served to support the body in its various positions. The most remarkable condition, however, presented itself in the structures around the right knee; the soft structures had sloughed away anteriorly and latterally, leaving the black, gangrenous end of the femur projecting several inches. All the cartilages had disappeared, but the interarticular ligaments were intact; the posterior soft structures were in good condition. The condition of the left knee was somewhat better than the right, one condyle only protuded through the skin, but a rapidly spreading gangrene was making good progress, and this knee would soon have presented the same condition as the other. The abdominal walls were thin, in fact there was scarcely a trace of superficial fascia, the wall was adherent to the omentum and to the peritoneal covering of the liver. These adhesions were dissected away. Liver: Weight 2,200 grams. Position: Extends transversely across the abdomen on a level with the fifth costal cartilage, displacing the thoracic viscera upward covering the stomach, and to a small extent the spleen. The line of lower boundary is nearly transverse across the abdominal cavity about 5 cm. above the umbilicus. It is adherent to the abdominal wall, the diaphragm, the stomach, the spleen, the transverse colon, and the intestines. The capsule is adherent, color is lighter than normal, the entire liver structure is filled with amyloid bodies, practically complete amyloid degeneration. As evidence that the organ had been almost functionless for some time the gall bladder was found quite empty and showed no evidence of staining from bile salts. Stomach apparently smaller in size than normal and adherent to all surrounding structures. Spleen: Weight 400 grams, so pulpy in consistency that on section the parenchyma oozed from capsule. This organ was also adherent to the surrounding structures. Left kidney: Weight 300 grams, capsule adherent, pale in color, shows evidence of both amyloid and fatty degeneration. Right kidney: Weight 282 grams, capsule adherent, pale in color, and shows the same degenerative changes as its fellow, but not so marked. Appendix: Bound down by adhesions to the peritoneum of the abdominal wall and cæcum. Mesentery: Normal in attachments, congested in appearance, studded with miliary tubercles, and covered with organized lymph. Peritoneum: Studded with tubercles, covered with organized lymph, and all opposing surfaces adherent. This was especially marked with the mesentery, which was adherent to the liver, stomach, intestines, and anterior abdominal wall. Heart: This organ was displaced upward and to the left by the liver, causing it to lie in a transverse position; weight 390 grams; contained chicken fat and currant jelly clots; the ventricles were slightly hypertrophied and the valves were intact. Lungs: Left, weight 790 grams, and area of congestion at the apex and a few scattered tubercles. Right more congested at the apex than left and containing more tubercles. The posterior mediastinum: After removing the thoracic viscera an abscess sac could be seen extending downward from the fourth dorsal vertebra, behind the diaphragm, to the psoas muscle, the sheath of the muscle forming the sac in this location. This sac was opened throughout its extent, the spinal column formed the posterior boundary; the vertebræ were denuded of periosteum, the vertebral canal being opened in several locations, showing almost complete destruction of the spinal cord. The pus was of the character known as puruloid; that is, the pus of the tubercle bacilli. Post-mortem diagnosis: Tubercle of spinal column. Complications, spinal paralysis with its accompanying sequelæ.

H. B. P.
C. P. W.

Tubercle of lung.

M. W. (colored); age 40; nativity, Louisiana; admitted to the United States Marine Hospital, New Orleans, La., November 19, 1900; died November 20, 1900.

Previous history.—Patient states that he was taken sick with bronchitis about the first of the present month, applied to the out patient office on November 4, since then there has been no improvement. Several days ago began spitting blood; on November 15 spit up a considerable quantity of blood. On November 19 was admitted to the hospital. At 2.30 a. m. the following morning began coughing and spitting blood. He fell while in water-closet; heard him fall. The nurse on arrival found the patient lying on the floor unconscious, with blood streaming from the nose and mouth. The assistant surgeon was then called; on arrival he found that life was extinct.

Necropsy (*fourteen hours after death*).—The body is well nourished and well developed; rigor mortis present and marked. The body was opened and the calvarium removed, the organs dealt with seriatim. Brain: Normal in size; cortical veins congested; no other pathological lesion noted. Heart: Weight, 325 grams; markedly contracted and empty; mitral, aortic, and tricuspid valves normal. Pericardium contains about 30 cc. of fluid, normal in appearance. Left lung: Weight, 660 grams; crepitant throughout; no adhesions; contains a small amount of blood due to inspiration; apex apparently free from tubercles. Right lung: Weight, 830 grams; adherent at apex and in small patches at irregular intervals to the costal pleura; no adhesions to diaphragmatic pleura A well-marked tubercular process of recent origin involves the apex, producing, with the large number of tubercles and their inflammatory zone, almost complete consolidation. Two small cavities are seen, one predisposing to the immediate cause of death. It is situated in the narrow strip of lung tissue between that branch of the pulmonary artery and bronchus that supplies the apex of the lung. Communication was apparently first made with the bronchus, and then the ulcerative process attacked the artery, establishing a free communication and causing death through hemorrhage. Pleura: Normal on the left side; adherent to the lung on the right side, as previously stated. Aorta and vena cava are both normal. Spleen: Smaller in size than normal; weight, 185 grams; structure apparently normal. Left kidney: Weight, 170 grams; apparently normal. Right kidney: Weight, 150 grams; apparently normal. Liver: Weight, 1,690 grams; slightly enlarged, but no pathological lesions are noticed. Gall bladder contains about 15 cc. bile. Stomach and intestines apparently normal. Appendix about 12 cm. long; free from mesoappendix except about 3 cm. at base. Urinary bladder empty.

From personal observation I would estimate that this man lost about 2 quarts of blood before death, death being caused either by the direct loss of blood or by suffocation. Post-mortem diagnosis: Tubercle of lung. Complications: Rupture of the pulmonary artery into the superior bronchus of the right side.

H. B. P.
C. P. W.

J. S.; age, 30; nativity, Kentucky; admitted to the United States Marine Hospital, Evansville, Ind., July 14, 1900, and died November 8, 1900.

History.—On admission he complained of having been sick about ten days with fever, pain in left side, and a cough. His respirations were short and rapid. Examination showed extensive consolidation of left lung. Case was diagnosed as lobar pneumonia. He did not improve. Fever remained high. Case was readmitted on August 7, 1900, as tubercle. He failed rapidly, and died at 3.45 a. m., November 8, 1900.

Necropsy (*twelve and one-half hours after death*).—Rigor mortis was marked. Pupils dilated. General nourishment of body very poor. Heart: Weight after opening, 340 grams. Wall of right ventricle was thinner than usual, otherwise the heart was normal. Pericardial sac contained about 25 c. c. clear fluid. Left lung: Weight, 1,847 grams; was one mass of tubercles, with two large cavities full of thick pus. One cavity was in apex of lung and the other one was in lower lobe. Pleural cavity on that side was obliterated. Right lung: Weight, 935 grams. The apex and upper parts lower lobe were involved. Pleural cavity normal. Liver: Weight, 2,345 grams; congested. Otherwise normal. Pancreas: Weight, 155 grams; normal. Spleen: Weight, 102 grams; normal. Left kidney: Weight, 232 grams; normal. Right kidney: Weight, 238 grams; normal. All other organs and tissues normal.

J. H. O.

L. J.; age, 56 years; nativity, Canada; admitted to United States Marine Hospital, Cleveland, Ohio, June 21, 1900; died September 28, 1900.

Clinical history.—Patient began to cough about four weeks previous to being admitted to hospital; has had severe night sweats, profuse purulent expectoration, diarrhea, and has had some pain in upper part of right side of chest; he has lost about 27 pounds within the last two months. Appetite is poor and patient is emaciated; has dyspnœa on exertion. Supraclavicular spaces are deep; clavicles, prominent. Expansion of left side of thorax is retarded. Respirations are hurried and superficial. Breathing at both apices is roughened. Left infraclavicular space is dull. There is prolonged expiration over both apices. Over both lungs, anteriorly and posteriorly, loud, moist râles are heard. Area of heart dullness is increased; heart sounds are loud, and pulse is quick and rather weak. Tubercle bacilli found in large numbers in sputum; also staphylococci. Sputum is profuse and purulent and of a nummular character.

Necropsy (*five hours after death*).—Body of an Indian, of medium build; rather emaciated. Enlargement of bones of left leg just below the knee, caused by callus of fracture. Rigor mortis present. Hypostasis is present over the back from occiput to sacrum; also over posterior surface of arms. Calvarium was not removed. Heart, normal size. There was calcareous deposit on aortic semilunar valves; other valves were normal. There was a dilatation of ascending and transverse portions of arch of aorta. The walls of aorta were rough, and contained a calcareous deposit; right side of heart was filled with a post-mortem clot; pericardium was thickened. The bronchial lymph glands were enlarged and contained calcareous deposits; also caseated tubercles present. Lungs: Both lungs were infiltrated with tubercles; left lung does not crepitate, but some crepitus in right lung; marked anthracosis of both lungs. On section, left lung was solid and contained numerous cavities, varying in size from a kernel of wheat to a hen's egg; some of cavities were filled with pus. Pleura of right lung was thickened; right lung was filled with a number of small cavities. Intestines normal throughout. Liver enlarged, especially the right lobe; mottled in color; on section, was tough and resistant; gall bladder contained golden yellow fluid. Right kidney was enlarged; capsule easily stripped off; on section was found to be normal. Left kidney, small; capsule readily stripped off; on section, no distinct pelvis was found, but several separate small pelvi. Spleen is normal in size and softened; follicles not readily seen. Pancreas showed beginning post-mortem change. Other organs normal.

W. J. P.
A. D. F.
J. F. M.

J. C.; age, 28 years; nativity, Kentucky; admitted to the United States Marine Hospital, St. Louis, Mo., June 29, 1900; died July 16, 1900.

History.—The patient stated his sickness began four months ago with pain in his right hip. He consulted a physician, who discovered an abscess over the iliac crest and freely incised it. The wound healed in about a month and he went to work. A week ago the wound became open again and began discharging pus. He has a slight cough and frequently has bleeding from the nose. Physical examination: Patient was brought into the ward on a stretcher, as he was too weak to walk. Body fairly well nourished; many papules and pigment spots on skin, probably due to syphilis. A wound 12 cm. long extends from right costal margin to middle of Poupart's ligament. From the middle of this wound a probe introduced through a sinus extends upward and inward for the space of 5 cm. Right leg rigidly flexed at hip. There is a large scar on left hip which he states is due to an old gunshot wound. The area of cardiac dullness is slightly increased and a few crackling and sibilant râles are heard over the left chest, just above and to the outer side of the heart; otherwise the heart and lungs are apparently normal. Abdominal cavity filled with fluid, and legs and genitals much swollen from œdema. Quantity of urine passed in twenty-four hours, 1,450 c. c.; specific gravity, 1.005; the urine contains a large amount of albumen, and the microscope shows the presence of large numbers of granular, hyaline, and epithelial casts, with a few red and white blood cells. The blood contains no malarial organisms. Temperature, 37.8°; pulse, 98; respiration, 38. On June 14 his abdomen was tapped and 2,800 c. c. of whitish fluid resembling a mixture of soap and water were drawn off. On the 16th he complained of a severe pain in his left side and said that his cough troubled him very much. The sputum was examined on the 16th, but no tubercle bacilli were present. He had two chills on June 28. July 9 his blood was examined at 10 p. m. to ascertain if any filaria were present, but none were found. The patient by this time had become greatly emaciated, and soon showed evidence of mental impairment. He refused to take any food, and had frequent hemorrhages from his nose, mouth, and anus. He died at 11 a. m. July 16. During his illness he had an irregular fever, the temperature ranging from 36° to 39.6°, the pulse from 82 to 116, and the respirations from 18 to 38.

Necropsy (*six hours after death*).—Body of a black adult male, 180 cm. long; much emaciated; dried blood on lips; numerous small lenticular spots on skin. Two well-marked vaccination spots on left arm. Right leg rigidly flexed at hip. Large scar 20 cm. long over front of each tibia, ankles œdematous. Wound 12 cm. long from right costal margin to middle of Poupart's ligament. Many scars on left hip and over crest of ilium. Skull 1 cm. thick behind, membranes of brain appear to be normal, brain looks anæmic. There is a small thin blood clot 1 by 2 cm. on left side of brain between the dura and pia mater, a smaller one on the right side, the weight of the brain is 1,339 grams; dimensions, 21 by 16 by 5 cm. On opening abdominal cavity there is a flow of clear yellowish serum, about 1,000 c. c. in amount. Peritoneum is thickened and of a grayish white color. Omentum without fat. Pericardium adherent to sternum, clear yellowish fluid to the amount of about 30 c. c. in pericardial sac. The heart is of a reddish gray color, with whitish streaks following blood vessels, soft yellow spot size of last joint of thumb at the extreme apex. Fluid blood of a chocolate color in the right ventricle. Soft yellow red clot in left ventricle. Tricuspid valve normal. Length of the heart, 8.5 cm.; width at base, 8.5 cm.; thickness, 4 cm.; weight, 220 grams. Thickness of right ventricle wall 0.6 cm.; of the left ventricle wall 1.5 cm.; the heart muscle is very soft and flabby. Right lung adherent posteriorly and above;

weight, 415 grams; dimensions, 22 by 18 by 5 cm.; slate color; crepitant throughout; bloody serum exudes from cut surface on pressure. Left lung: Pleura adherent over whole surface of lung, so it is impossible to remove the organ without tearing it to pieces; tissue of organ more dense than right lung and has the appearance of partial consolidation; blood and serum exude from cut surface. Spleen: Adherent; enlarged; weight, 405 grams; dimensions, 14 by 5 by 10 cm; two accessory spleens near hilum. The organ is reddish brown in color, very firm consistency, and is cut with difficulty. Left kidney: Weight, 200 grams; dimensions, 13 by 8 by 3 cm.; pale yellowish-brown color. Cortex 1.5 cm. thick; streaked with yellowish lines and many yellow spots the size of a pin head; tissue firm; pyramids normal in size; much fat in pelvis. Right kidney: Weight, 200 grams; dimensions, 12 by 8 by 3.5 cm.; appearance precisely the same as the left kidney. Stomach 16 by 7.5 cm.; contains yellowish fluid in small quantity having the odor of brandy; pancreas normal. Ascending colon bound to the right kidney and to the iliac fossa by dense adhesions; sigmoid flexure bound down to the ceacum; probe from the wound in right groin passes into an abcess cavity about the size of a walnut beneath ceacum. Only the proximal end of the appendix can be identified. The lumen is closed. Lower part of small intestines is full of dark brown fluid; areas of induration 1 by 5 cm. in the small intestine, just above the iliocaecal valve; they run transverse to the long axis of the intestine, small points of hemorrhage on these areas. Ceacum distinctly indurated, small ulcers with hard margins in ceacum, and lower 2 inches of ascending colon. Mesenteric glands enlarged. Liver: Weight, 1,081 grams; dimensions, 22 by 15 by 6 cm.: dark chocolate color on surface; deep red-brown color on cut section; tissue firm and dense.

W. G. S.

C. J.; age, 37 years; nativity, Norway; was admitted to the United States Marine Hospital, port of San Francisco, Cal., July 2, 1900, and died August 7, 1900.

History.—Family history negative. Patient entered hospital complaining of a cough which had resisted medication for about three months; also complained of paralysis of right side of face, and a discharge from right ear. Expectoration was profuse and purulent. Patient's voice was very hoarse, his throat pained him, and he found it very difficult to talk. Examination showed consolidation over left lung nearly to base, and consolidation of right apex to about the third rib. There were crepitations all over right apex, and bronchial breathing over upper part of right lung. Tubercle bacilli were discovered in the sputum on July 5, 1900. Patient gradually lost weight, cough and expectoration became worse, and his pulse became very weak. On August 5 the pulse was very rapid and feeble, pulse rate being 130, with great dyspnœa, feet and hands were quite cold, and some œdema of feet. There was extreme tenderness over left side of chest. Examination showed dullness anteriorly over apex of right lung down to third rib. In left apex a cavity was evident. On auscultation, anteriorly, loud bronchial breathing and crepitation was heard over entire right lung. Egophony heard over left apex and almost entire absence of breath sounds.

August 7.—Patient failing rapidly, extreme dyspnœa, pulse very rapid and feeble, later in afternoon became unconscious and died.

Treatment at first consisted of creosote and oil, maltine and whisky. This was soon abandoned, and his strength was maintained by a nourishing diet, whisky and strychnine. His right eye was washed twice daily with a solution of boric acid, his ear was treated with peroxide of hydrogen, and a spray of Dobell's solution used on his throat.

Necropsy (eighteen hours after death).—The body is that of a poorly nourished white adult male. Post-mortem lividity is slight; rigor mortis well marked; finger nails blue, and œdema of feet and legs. Abdominal cavity: Serous fluid not increased and no great discoloration of contents. Chest: Left pleural cavity contains 500 c. c. of straw-colored fluid and a quantity of offensive gas, the lung being compressed; strong pleural adhesions at apex; right pleural cavity contains no fluid, being entirely obliterated by pulmonary adhesions; the left pleural cavity also contains a large quantity of offensive gas, the lung being retracted. Pericardial cavity contains 100 c. c. of clear fluid. Heart: Weight, 255 grams; slightly smaller than normal, flabby, and pale; the valves were competent; interventricular fat somewhat increased; no sclerosis. Lungs: Left, weight, 650 grams; consolidated throughout; sinks in water; several cavities, from the size of a cherry to that of a lemon, in superior lobes; lung much pigmented, and made up almost entirely of tubercles. Right lung, weight, 1,050 grams; surface covered by many old adhesions; apex solidified; disseminated tubercles and tubercular foci throughout lung; cavity size of a cherry in apex; lung floats. Liver: Weight, 1,630 grams;

neither surface nor cross section shows anything abnormal. Gall bladder: Contains a small amount of bile; bile ducts normal. Spleen: Weight, 110 grams; very soft and flabby, somewhat congested, and smaller than normal. Left kidney: Weight, 180 grams; capsule strips easily; section somewhat pale; perinephritic fat increased in amount. Right kidney: Weight, 160 grams; capsule nonadherent; surface smooth; section shows cortex somewhat granular and pale. Intestines: A contracted condition of the descending colon and rectum, with an accumulation of hard fecal matter above. There are no evidences of stricture, but several loops of small intestines adherent to themselves and to omentum; six large tubercular ulcers found in ileum and jejunum. Brain: Weight, 1,337 grams; inflammation of upper part of cerebrum and adhesions between duramater and piamater. Tubercular involvements of middle ear. Larynx: A tubercular ulcer on epiglottis, about 1 cm. in diameter; ulcer of left true vocal cord, with considerable erosion of the same; a small vegetation on right cord.

A. M. M.
R. L. W.
J. M. G.

K. H.; age, 27; nativity, Sweden; admitted to United States Marine Hospital, Fort Stanton, N. Mex., November 21, 1899; died August 6, 1900.

Previous history (condensed from clinical notes of medical officer in command at Wilmington, N. C.).—Admitted to United States Marine Hospital April 5, 1899. Family history negative. Personal history: Has had malaria, scarlet fever, and yellow fever. Present attack began three years ago, after exposure to cold. Bronchitis resulted, followed by constant cough, loss of weight, and night sweats. Physical examination shows bronchial breathing at both apices. In hospital he improved for a time, but then gradually grew worse again. Cough, frequent night sweats, pain in chest, and dullness on percussion. Growing worse, great loss of weight. No tubercle bacilli could be demonstrated in the sputum.

C. P. W.

Condition as noted on arrival at Fort Stanton was as follows: Emaciation anæmia, weakness, dullness in left apex, crackling râles in same and more or less throughout the lung. Right lung apparently normal. Sputum showed many tubercle bacilli; urinalysis negative. The patient improved for some time, up to a certain point, holding his own for quite a while; then gradually he began to lose again. Administration of Klebs's antiphthisin for a time seemed to check the downward course and even to cause some improvement generally, but its effects soon wore off and the patient slowly retrograded in spite of everything done. Dullness increased in left lung, and the right apex began to show dullness and crackling râles, increasing till the upper lobes were badly infected. Several severe hemorrhages occurred at different times, probably from a cavity detected in the left apex. Diarrhea became constant and distressing. An obstinate ulcer appeared on the auricle of the left ear, in the pus of which tubercle bacilli were found. The urine always gave a strong diazo reaction. His condition slowly went from bad to worse, death occurring on the morning of August 6, 1900.

Necropsy (twenty-four hours after death).—Inspection of body: Emaciation; rigor mortis and post-mortem lividity well marked. Calvarium not removed. Thorax: Anterior mediastinum contained enlarged glands. Heart small; its fat all absorbed; valves competent to water test. Pericardium adherent to left pleura; its cavity contained a small amount of serous fluid. Left lung consolidated superiorly, and thickly infilterated with tubercles inferiorly; contained very little tissue that would float on water; several cavities in apex. Right lung not quite so much involved, though a large amount of consolidation in upper lobes, and many separate small foci in the lower lobe; which latter contained practically all the functional pulmonary tissue remaining. Right apex contained a large cavity filled with pus. Great vessels, nerve trunks, and diaphragm normal. Abdomen: Omentum normal. Spleen and left kidney normal. Right kidney enlarged and its capsule partially adherent; section showed congestion. Suprarenal capsules normal. Urinary bladder, organs of generation, rectum, and duodenum all normal. The stomach contained undigested milk, and its mucous membrane was congested. Gall ducts normal. Liver much enlarged and in a state of passive congestion. Pancreas normal. Mesentery contained a few tuberculous deposits. Small intestines, large intestines, and great vessels normal.

Microscopical examination of diseased tissue demonstrated typical tubercle bacilli and histological structure.

C. R.
J. O. C.

A. P.: age, 45; nativity, Ohio: admitted to United States Marine Hospital, Fort Stanton, N. Mex., March 8, 1900; died September 29, 1900.

History (condensed from clinical notes of medical officer in command at St. Louis, Mo.).—Admitted February 17, 1900. Family history negative. Present sickness began about nine weeks ago with soreness in diaphragm on pressure and on walking. Cough developed, rapidly getting worse. Dyspnœa, weakness, loss of weight, little expectoration, anorexia, and bowels irregular. Two chills ten weeks ago. Increased vocal fremitus on right side; respiration at right apex slightly rough and jerky. Apex beat diffused. Smooth systolic murmur present. Pulse high tension. Apparently a small hernia on right side of abdomen. The sputum contained many pneumococci, and later tubercle bacilli. Transferred to Fort Stanton.

W. G. S.

Condition as noted on arrival at Fort Stanton was as follows: Body fairly well nourished: right side somewhat depressed; tumor to right of umbilicus, with varicose veins. Palpation: Vocal fremitus over right apex; abdominal tumor gives impulse on coughing. Percussion: Pitch of right lung highest; spleen enlarged. Auscultation: Bronchial râles over both lungs; cog-wheel respiration; vocal resonance stronger in right lung superiorly. Heart: No murmur detected; apparently normal in all respects; pulse rapid. Sputum showed a few tubercle bacilli. Urinalysis negative. Gave a history of malaria, rheumatism, and alcoholism, but concealed his having had syphilis, which was revealed during the necropsy. His lung symptoms rapidly improved, but the liver and spleen began to enlarge considerably, and, together with several malarial attacks and one very severe attack of articular rheumatism, his physical condition became very poor. A loud mitral murmur developed in the course of the rheumatic seizure. The notes from St. Louis mentioned a "smooth systolic murmur," but it was not detected here on his arrival. Several days prior to death acute nephritis suddenly developed, bringing about the fatal termination September 29. The urine during this latter time was scant and loaded with albumin and casts.

Necropsy (twenty-four hours after death).—Inspection of body: Cadaveric rigidity and post-mortem lividity well marked; face and body bloated and somewhat cyanotic. Calvarium not removed. Thorax: Several enlarged glands in the anterior mediastinum. Layers of pleuræ adherent to pericardium on left side and to diaphragm on right. Visceral and parietal layers partially adherent in places. The lungs each contained scattered tubercles, most marked in the right apex, which was in a pneumonic condition. Many healed areas of scar tissue were present. The lungs were somewhat congested and the bronchi contained frothy matter. Heart much enlarged, and mitral and aortic valves incompetent to the water test. Masses of vegetations on mitral valve and in the aorta, causing stenosis; one leaflet of the aortic valve destroyed by vegetations. Pericardium thickened and contained a small amount of serous fluid, partially adherent to left pleura.[a] Abdomen: Omentum normal. Spleen enlarged and contained several large gummata, also a wide band of connective tissue constricting its middle; adhesion to tail of pancreas and left suprarenal capsule. Kidneys swollen and capsules tense, but not adherent. Considerable congestion of cortex and medulla; also several well-marked gummata in each organ. Right suprarenal in normal condition: left enlarged and adherent to tail of pancreas. Urinary bladder, organs of generation, rectum, and duodenum in normal condition. Stomach dilated and contained undigested food. Gall ducts normal. Liver much enlarged and in state of hypertrophic cirrhosis; several large gummata present. Tail of the pancreas adherent to spleen and left suprarenal capsule. The mesentery, small intestines, large intestines, and the great vessels normal. Atrophy of abdominal muscles on right side.

C. R.
J. O. C.

W. R.: age, 35; nativity, Illinois: admitted to United States Marine Hospital, Fort Stanton, N. Mex., February 14, 1900; died October 6, 1900.

History (condensed from clinical notes of medical officer in command at St. Louis, Mo.).—Family history negative. Personal history: Pneumonia in left side in 1884; also malaria. Syphilis in 1886. Chancroids twice. Present sickness began in June of 1899, from exposure to storm. Caught a heavy cold, and has had slight cough and expectoration ever since. Admitted to Marine Hospital, St. Louis, Mo., December 5, 1899. Anæmic appearance, flat chest, dyspnœa, constipation, tactile fremitus exaggerated, on right side many asthmatic râles; on left side breath sounds weak, with a few râles. Decreased left resonance. Got worse December 9, with chill, pain in loins, increase of râles on left side, and of pulse and temperature. Better since the 13th. After many trials, tubercle bacilli found in the sputum.

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[a] The great vessels, nerve trunks, and diaphragm normal, except that the pleural layers of the latter were partly adherent.

W. G. S.

Condition as noted on arrival at Fort Stanton was as follows: Depression under right clavicle; evident dyspnœa and weakness; a very sick man. Palpation: Vocal fremitus greater in upper part of right lung. Percussion: No positive dullness elicited. Auscultation: Numerous râles of various kinds all over the lungs. Heart: Action weak, pulse 130; valvular sounds seemed normal. February 18, another examination revealed slight dullness in the left apex and also in axilla. Examination of sputum showed a few tubercle bacilli, not perfectly typical, however. Urinalysis negative. After getting over the fatigue of the journey he had several severe setbacks, but after a time began to mend steadily in every way, up to the date of his death, which was in consequence of sudden hemorrhage during the night. Though the sputum of this patient was abundant and viscid, it was next to impossible to demonstrate tubercle bacilli. Such as were found were never typical, and the slide usually exhibited large numbers of bodies holding the primary stain against acids; they may have been disintegrated tubercle bacilli, or involution forms of the same.

Necropsy (*about seven hours after death*).—Inspection of body: Dried blood over lower part of face, and the mouth contained clotted blood. Rigor mortis present. Calvarium not removed. Thorax: Anterior mediastinum contained several enlarged glands. Heart and pericardium normal. Lungs showed partial adhesions of pleural layers, most marked in upper portions, especially so on right side. They contained many consolidated areas, especially above, the right being most involved. Small cavities in apices, one in the left showing remains of a ruptured blood vessel, which was evidently responsible for the fatal hemorrhage. Many signs of healing processes, well under way, were found, as shown by areas of scar tissue. The great vessels, nerve trunks, and diaphragm were normal. Abdomen: Omentum normal. Spleen had a gummatous mass on its upper part, causing adhesion to diaphragm. Kidneys and suprarenal capsules, urinary bladder, organs of generation, rectum, duodenum, stomach, gall ducts, liver, pancreas, mesentery, small intestines, large intestines, and great vessels all normal. Microscopical examination of one of the enlarged mediastinal glands did not show tubercle bacilli—only the atypical forms seen in the sputum.

C. R.
J. O. C.

Tubercle of lungs, etc.

H. J. (colored); age, 27 years; nativity, Tennessee; admitted to the United States Marine Hospital, St. Louis, Mo., July 9, 1900, and died August 28, 1900.

History.—The patient's illness began four or five days ago. He has felt weak and tired, his appetite has been poor and his bowels constipated. He has had headache but no chills or sweats. He has a slight cough, but little expectoration. There is slight dullness over both lungs and the respiratory murmur is a little harsher than normal. There is tenderness over the spleen, but no tympanitis is present. Respirations, 24; pulse, 81; temperature, 38°. The fever was irregular and did not reach normal until July 23. The temperature rose again immediately, however, and did not return to normal until the morning of July 28. From that time until his death it descended to normal for a brief interval only on four occasions. The temperature ranged most of the time between 37.5° and 39.5°, the respirations between 23 and 36, and the pulse between 60 and 90. The sputum was examined every few days, but no tubercle bacilli were found. The tongue was moist most of the time and bowels loose. He slept well and complained of no pain. He had no appetite and he was made to take nourishment with difficulty. On August 24 he had a hemorrhage from his nose. The quantity of blood lost was not great. He became extremely weak and very much emaciated, and died from exhaustion August 28, at 6.15 p. m.

Necropsy (*fifteen hours after death*).—Height, 183 cm.; small umbilical hernia present. Brain: Weight, 1,325 grams; measurements, 18 by 16 by 8 cm.; slightly congested. There is very little fat in the walls of the abdomen; the muscular tissue is of a very dark color. Peritoneum is of a light gray color; intestines distended with gas; small quantity of fluid is present in the peritoneal cavity. Heart: Weight, 270 grams; measurements, 13 by 10 by 6 cm.; tissue soft and flabby;

right ventricle empty; thickness of wall, 7 mm.; left ventricle contains dark clots; valves normal; thickness of wall, 1½ cm. Right lung: Weight, 1,410 grams; measurements, 26 by 22 by 8 cm.; color, reddish slate; tissue crepitant; numerous small tubercles present throughout the whole lung; no evidence of the tissue having broken down, nor does any pus exude on section. Left lung: Weight, 1,005 grams; measurements, 22 by 18 by 6 cm.; condition the same as the right lung. Spleen: Weight, 440 grams; measurements, 16 by 12 by 5.5 cm.: pulp very soft; color, reddish brown. Left kidney: Weight, 230 grams: cortical portion 7 cm. thick; color pale red. Right kidney: Weight, 220 grams; measurements, 14 by 9 by 4 cm.; cortical portion of a yellowish-red color, the yellow being in spots and streaks; thickness of cortical portion, 1 cm. The walls of the lower part of the ileum are filled with small tubercles. One round ulcer is present in the ileum, about 2.5 cm. from the mesenteric attachment and about 10 cm. from the cæcum; this ulcer has healed; it involves the muscular layer of the intestines only, the floor being formed by the peritoneal covering. This ulcer was about 1.5 cm. in diameter. Some of the mesenteric glands are indurated. Liver: Weight, 1,934 grams; measurements, 31 by 22 by 7 cm.; color on section of tissue reddish brown.

W. G. S.

K. H.: age, 27 years; nativity, Sweden; admitted to United States Marine Hospital, Fort Stanton, N. Mex., November 21, 1899; died August 6, 1900.

History (taken from clinical notes of the medical officer in command, Wilmington, N. C.).—Family history negative. Has had malaria and scarlet and yellow fevers as a child. Present attack began three years ago, after exposure to cold; bronchitis developed, and since then he has had a constant cough, varying in intensity, constantly losing weight. Has night sweats at rare intervals. Examination of chest: Bronchial breathing at both apices. Since admission to hospital there was at first marked improvement, but gradually the symptoms returned with increased severity, cough became worse, night sweats more frequent, dullness on percussion more marked; patient complaining of a dull pain, varying in intensity, first on one side and then on the other.

April 5, 1900.—The lungs were again examined, and showed increased roughened breathing at both apices; dullness more marked. Examination of sputum failed to reveal the tubercle bacilli. For five months past patient has been slowly growing worse, sometimes appearing much improved, but this succeeded by returns of the distressing symptoms. There has been no great loss in weight, and at the same time there has been little or no gain. The treatment throughout has consisted chiefly of cod-liver oil and creosote, with such symptomatic treatment as was necessary. Present condition: Has large deposit of tuberculous tissue in apex of left lung, and in posterior part of lower lobe on left side. There is considerable pleurisy at the apex. The right apex is also affected.

November 21, 1899.—Weight, 121.25 pounds. Inspection: Limited respiration on left side. Slight depression about 5 cm. below left clavicle. Palpation: Vocal fremitus increased over upper part of left lung posteriorly. Auscultation: Numerous râles heard over entire left lung and over right lung to third or fourth rib; râles most marked in left apex and just below left clavicle. Respiration normal in right lung below third rib. Heart: Pulmonary second sound much accentuated; otherwise heart is normal as regards position, size, and valves; pulse rapid. Sputum: Tubercle bacilli found in great numbers.

February 22.—Dullness in right apex also; râles same in both lungs as at previous examination, but now have a more pronounced clicking sound; dullness in lower part of left lung posteriorly from lower margin of thorax for about 7.5 cm. above. Complains of gurgling during respiration in middle lobe of right lung. The patient continued to have high temperatures, but even then he was always cheerful and hopeful of recovery. His appetite was fairly good most of the time.

December 18.—Patient was given another physical examination and the lesion seemed to be spreading, and both lungs showed foci of infection throughout. The latter part of March there was a marked improvement, and he was moved into a general ward. A few days after, he contracted tubercular pneumonia and nearly died. He gradually and slowly went down after this. The hemoglobin remained close to 75 per cent, and the blood count at 4,000,000 until a few weeks before his death, and then ran down rapidly. He responded nicely at all times to the diazo reaction. Had several slight hemorrhages from time to time; also had them before coming here. He died from exhaustion.

Necropsy (thirteen hours after death).—Body very much emaciated. Rigor mortis well marked. Skin yellowish; no bedsores. The thorax examined in the usual manner. The pleuræ and pericardium were firmly adherent to the anterior chest wall, which restricted the excursion of the heart. Heart small, all of its fat being absorbed; valves normal; pericardium firmly united to the pleuræ. The pleuræ were so firmly bound down that it necessitated the dissection of both lungs to be able to remove them. The apex of the left lung was broken down, forming a large irregular cavity from which there had been some oozing. The cavity in the right apex was healing. The other portions of the lung tissue were studded throughout with deposits, some of which were breaking down. The bronchial glands were destroyed. The great vessels were normal; spleen was very small; kidneys were hyperæmic and larger than normal; suprarenal capsules, urinary bladder, organs of generation, rectum, duodenum, and stomach were normal; liver was much enlarged, extending over the left hypochondriac region; it was friable, and the capsule could easily be removed. The gall bladder, gall ducts, pancreas, mesentery, small intestines, large intestines, and great blood vessels were normal. The appendix was about 15 cm. long, was turned up, and adherent to the under side of the liver.

J. O. C.

C. W.; age, 28 years; nativity, Russia; admitted to United States Marine Hospital, Baltimore, Md., July 13, 1900; died September 6, 1900.

History.—Family history entirely negative. Personal history: Temperate in all habits; never ill before the onset of present disease. Present illness: Two years ago was shot in the left side, the ball entering between the seventh and eighth rib in a line with the axillary border of the scapula. For eight days there was bloody expectoration and aphonia. Remained in hospital two months and twenty-eight days and then took three months in which to rest. Admitted to United States Marine Hospital, Boston, Mass., in April, 1900, because of weakness and insomnia occasioned by cough. At the end of two months and sixteen days felt strong enough to work and was discharged at his own request, but upon reaching Baltimore was again unfit for work and applied for admission to hospital. The general condition on admission was bad. Inspection shows a long, flat chest with supra and infra clavicular spaces sunken. Palpation showed diminished expansion and increased vocal fremitus, particularly marked on right side. Auscultation: Crackling, mucus, moist, and bubbling râles distributed throughout entire chest and amphoric breathing over an area on the left anterior chest wall extending from the second to the third rib and about 1 inch in diameter. Examination of the sputum showed tubercle bacilli in great numbers.

Necropsy (five hours after death).—Body extremely emaciated. Rigor mortis very slight. Moderate degree of post-mortem lividity. Chest: Pericardial sac normal; contained 16 c. c. of fluid. Heart: Contained 110 c. c. of fluid blood. A moderate-sized ante-mortem clot was found in left ventricle. Weight, 270 grams (after opening). The ventricular walls were of normal thickness and resistance, and the aortic, mitral, pulmonary, and tricuspid valves competent. Thoracic and abdominal aorta and other arteries normal. Respiratory organs: Nares, larynx, and trachea normal. Both pleural cavities showed a most exceptional condition in the way of adhesions, the entire pleuræ of both sides being bound down by very tough fibrinous adhesions so tightly that it was impossible to remove either lung intact. The pleural cavities contained no fluid. Right lung: Numerous small cavities in upper and middle lobe ranging in size from a pea to a marble and filled with a very offensive purulent fluid. Weight, 710 grams. Left lung: Near the posterior border of apex a cavity the size of a hen's egg; communicating with this and inferior to it were several smaller cavities, all filled with a fluid similar to that contained in the cavities of right lung. The whole lung infiltrated with tubercle and tuberculous matter. Weight, 965 grams. Abdominal contents: Peritoneum apparently normal. Liver normal. Weight, 1,730 grams. Pancreas normal. Kidneys: Capsules nonadherent and kidney structure normal. Weight—right, 130 grams; left, 140 grams. Ureters, bladder, prostate, and urethra normal. Spleen, normal; weight, 200 grams. Gastro-intestinal tract: The tongue, pharnyx, œsophagus, and stomach normal. The small intestine presented in the lower portion of the jejunum and the entire length of the ileum, at varying distances, a succession of ulcers, varying in depth, running at right angles to the long axis of the intestine and situated opposite the mesenteric attachment. Large intestine apparently normal. Rectum presented two large well-defined ulcers. The mesenteric glands were enlarged and indurated. The head, scalp, skull, meninges, and brain were normal. Weight of brain, 1,410 grams.

W. C. B.
G. P.

ENTERIC FEVER.

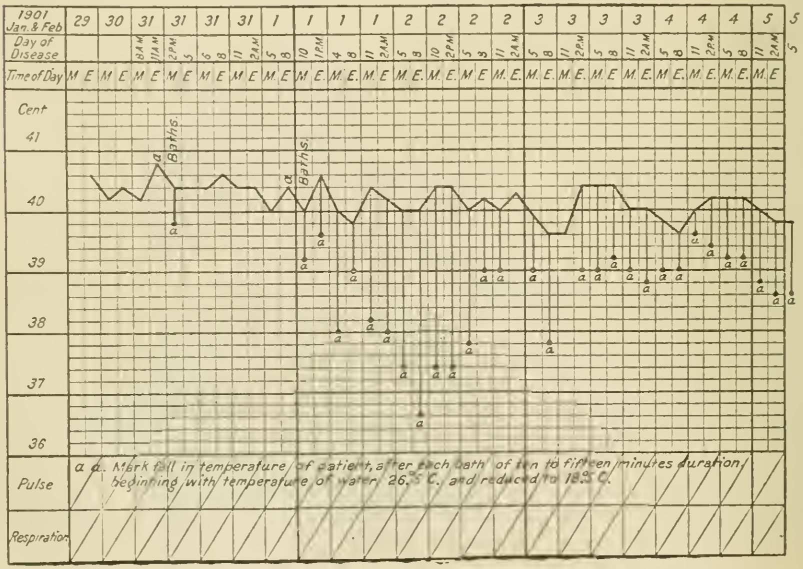
Inflammation of mucous membrane of larynx, acute catarrhal.

J. D.: age, 46 years; nativity, Sweden; admitted to United States Marine Hospital, port of San Francisco, Cal., January 29, 1901; died May 26, 1901.

History.—On entering patient complained of pain in the abdomen, occasional chills, and inability to eat. Bowels regular. Examination showed rose spots on abdomen and lower thorax; moderate tympanites. Temperature, 40.6 C. The tympanites increased, masking the liver dullness. The temperature remained high, only being controlled by baths. Sordes were present. Bowels became open, moving three or four times a day. In the second week patient became somnolent, the heart's action became rapid, the sounds being muffled. At this time appeared a slight hacking cough. The diazo reaction was present in the urine. At the end of the second week ecchymoses appeared on the scrotum and thighs, and a purulent discharge came from the left ear. The signs cleared up, with the exception of the cough and a rapid, low-tension pulse. The hearing became better and the ear condition improved. Patient discharged, recovered from enteric fever, April 11, and readmitted for acute catarrhal inflammation of larynx, mucous membrane, April 12. The patient improved under inhalation treatment, the temperature becoming normal and breathing easier, though irritation of the larynx and vocal cords was still present. May 17, severe attack of dyspnœa and cardiac failure threatened. Improved until May 20, when he died suddenly of heart failure in spite of active stimulative treatment.

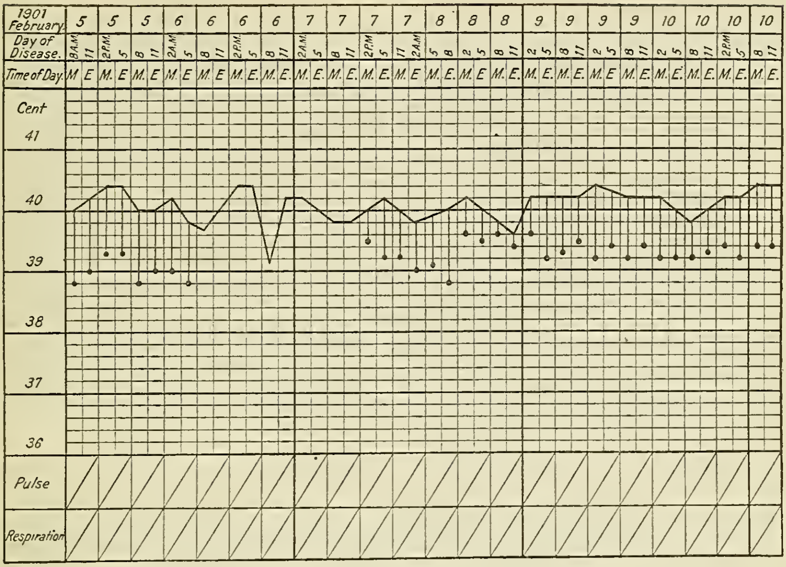
Treatment.—On admission for the first time patient was given a gentle mercurial purge with aromatics for two days, when treatment by means of cold baths, whisky, and strychnine was instituted. The other treatment was local, listerine for the mouth, boric-acid solution to wash out the ear, laxatives and stimulants as indicated. As the enteric symptoms subsided tonics—chloride of iron and Fowler's solution of arsenic—were given, alternating with quinine. At the time of the first discharge patient was on potassium iodide and protoiodide of mercury pills. He was also receiving a cough mixture containing morphine sulphate and ammonium chloride. During the second period treatment was continued with the addition of a tent over bed connected with a steam kettle for giving inhalation of turpentine vapor. At the time of death patient was on potassium iodide. Large doses of alcohol and strychnine were given in the hope of supporting the heart, but all efforts were unavailing.

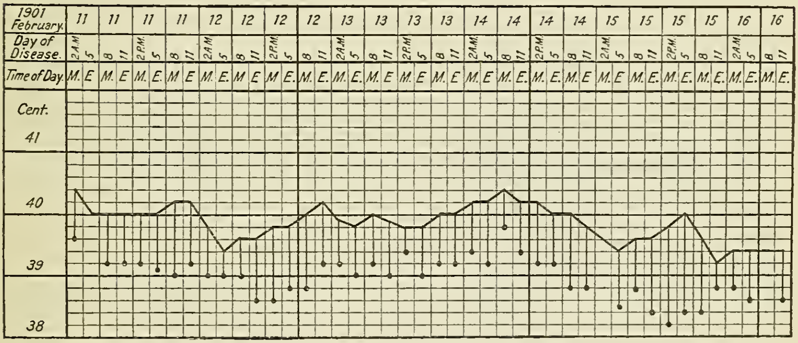
U. S. Marine Hospital, port of San Francisco, Cal.
Name J. O.; age, 46 years; disease, enteric fever.

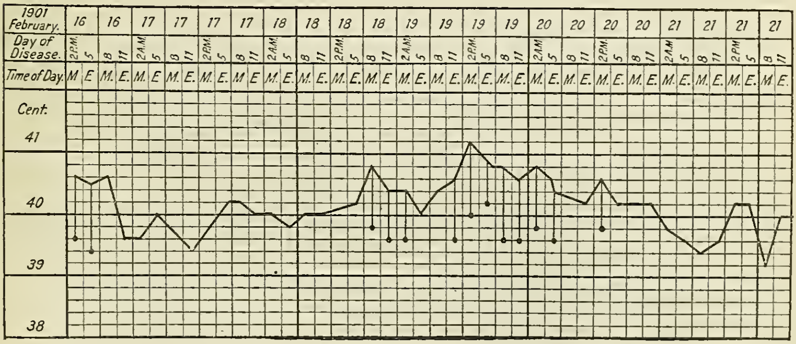


a a. Mark fall in temperature of patient, after each bath of ten to fifteen minutes duration, beginning with temperature of water, 26.5° C., and reduced to 18.5° C.

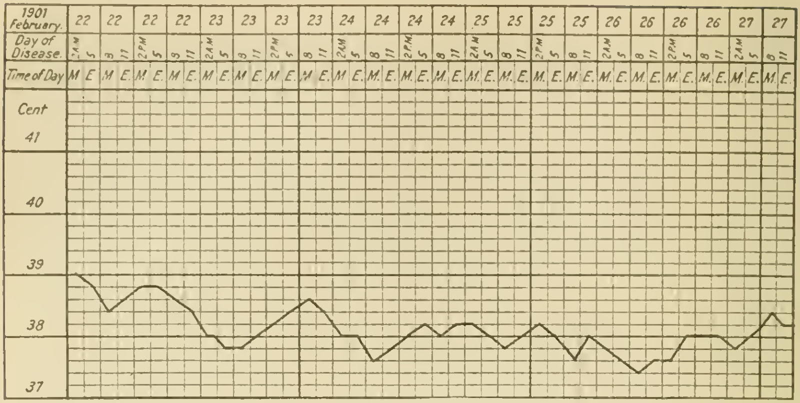
U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. O.; age, 46 years; disease, enteric fever.

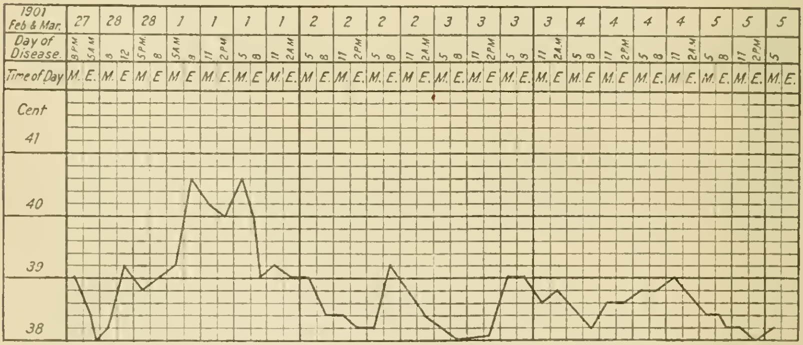


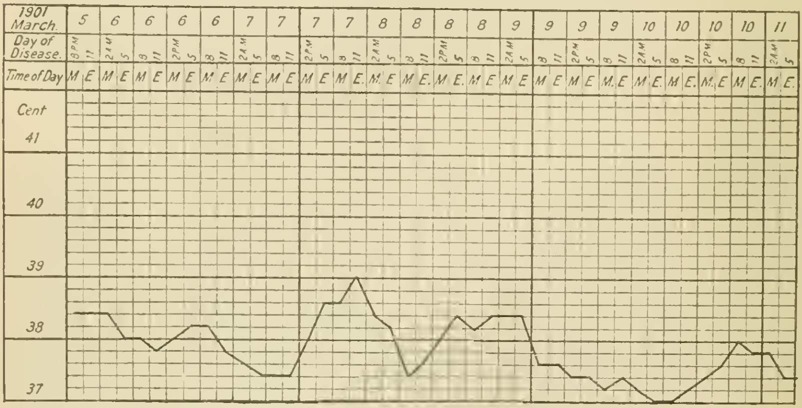




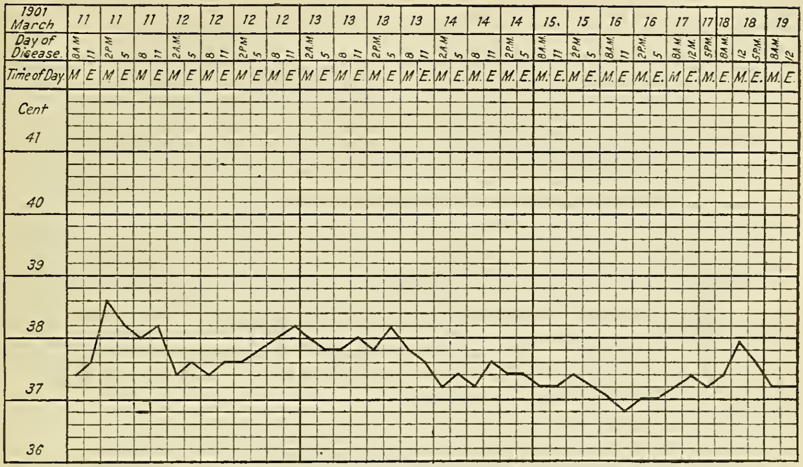
U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. O.; age, 46 years; disease, enteric fever.

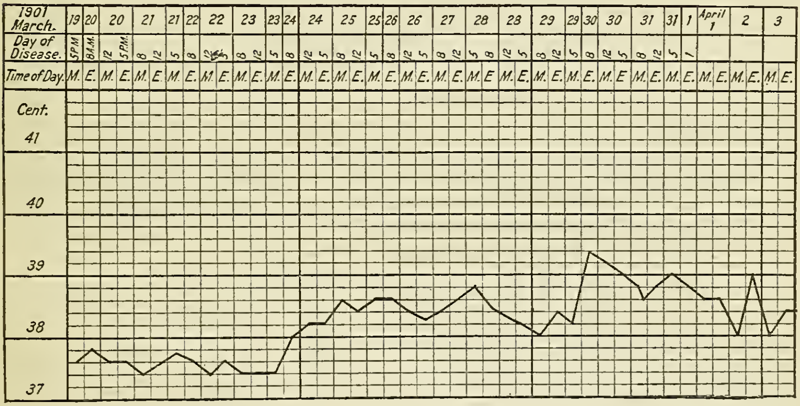


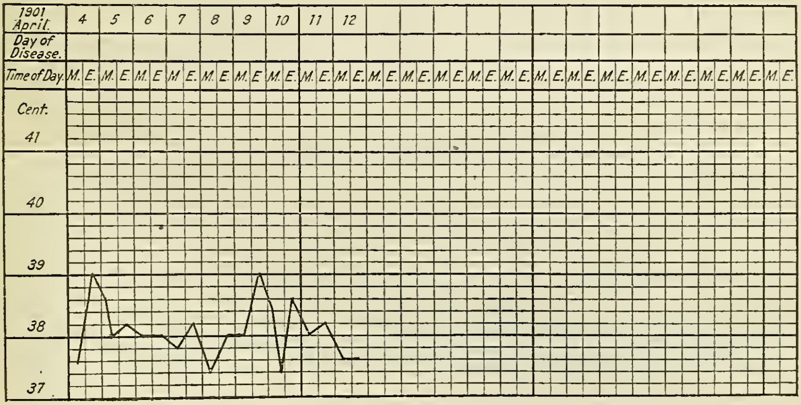




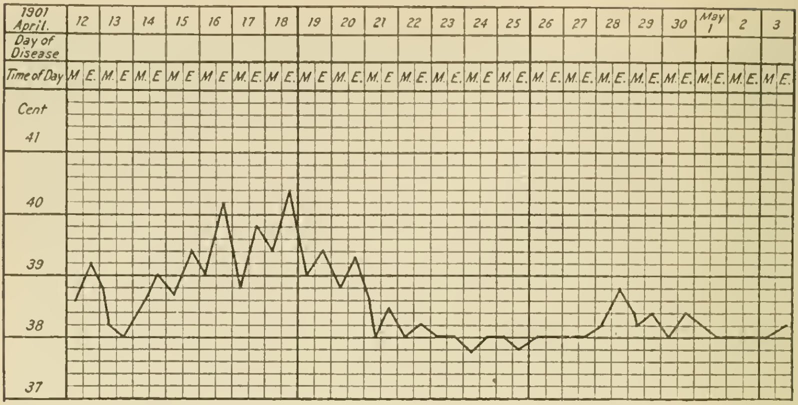
U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. O.; age, 46 years; disease, enteric faver.







U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. O.; age, 46 years; disease, inflamation of the mucus membrane of the larynx.



Necropsy (twenty-two hours after death).—The body is that of a muscular adult white male, much emaciated, and with a large skeletal development. Height, 1.775 meters; rigor mortis present; suggilations not well marked. Brain, 1,250 grams weight. Dura mater adherent and congested. Right lung, 480 grams weight; floated in water. Left lung, 470 grams weight; floated in water; slight adhesion at apex. Pericardium normal; tissue of great vessels infiltrated with fat. Heart, 350 grams weight. Muscle of left ventricle much paler than right and infiltrated with fat. Valves normal in appearance and competent by the hydrostatic test. Liver, 1,730 grams weight; congested. Spleen 205 grams weight; congested and friable. Stomach normal. Large intestine sacculated, rugæ obliterated; walls congested, thin in spots, and adherent, presenting all grades of healed ulcers. Small intestine: The ileum shows many healed ulcers. Kidneys, 440 grams weight, combined; congested. Larnyx: The vocal cords show fatty changes. There are ulcerating surfaces in the larnyx which are bathed in a thin purulent fluid. Other organs normal.

J. N. F.
C. W. V.
J. M. G.

Enteric fever, with complications.

H. P.; age, 24 years; nativity, Finland; admitted to United States Marine Hospital, Stapleton, N. Y., March 3, 1901.

Identification.—Light hair, gray eyes, initials H. E. P. and date 1877 tattooed on the left hand.

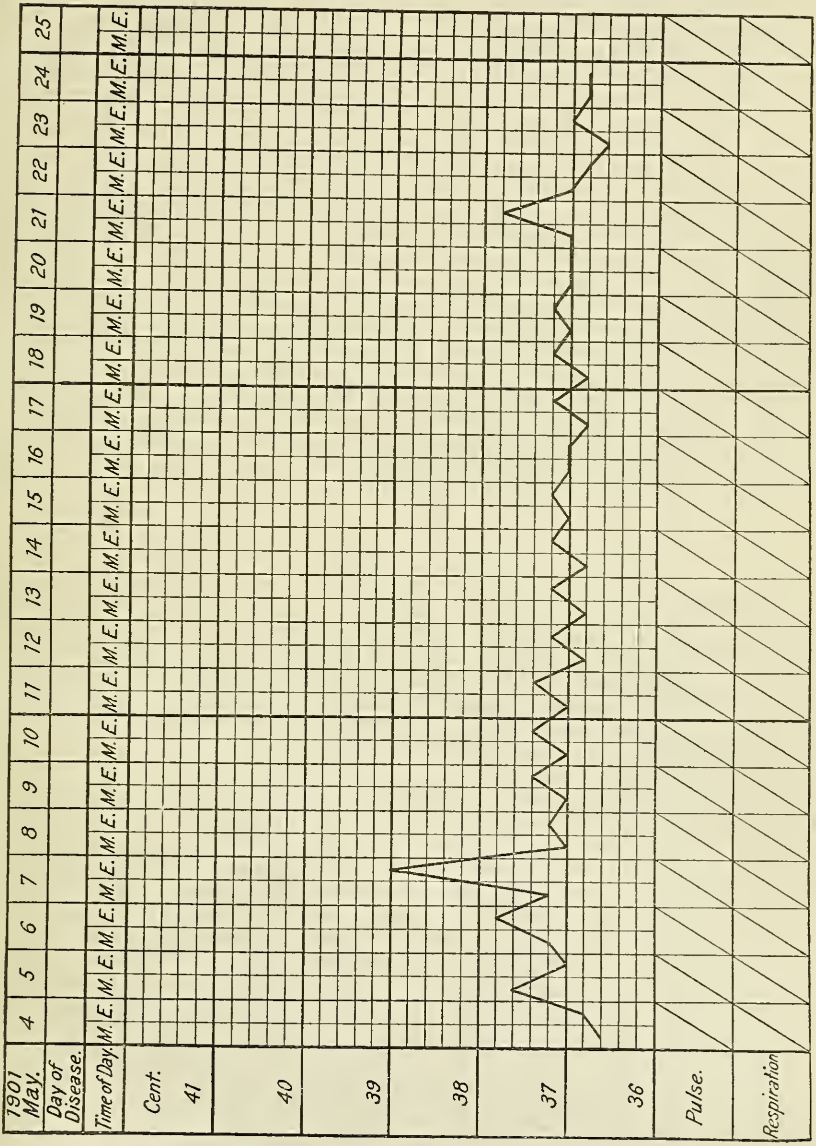
History.—Difficult to obtain with accuracy, as patient does not speak or understand English very well and is in a stupid condition as well. During the past nine months he has spent much time in hospitals, at Mobile, Boston, and Norfolk, suffering with rheumatism. Says that his present illness is of two or three weeks' duration, but that he has had a cough for a long time. Has been unable to work for five days. Complains chiefly of shortness of breath and cough. Only venereal trouble was soft chancer seven years ago.

Examination.—Patient presents the appearance of being seriously ill, is weak and very short of breath, and is mentally dull. Skin is dry, the cheeks flushed, and the pulse, although of fair volume and regular, is rapid. Over the entire chest there is harsh breathing with sonorous and sibilant râles, and moist, bubbling râles. The apex of the heart is displaced directly downward about an inch, and a loud systolic murmur is audible. There is slight abdominal tenderness, the spleen is enlarged to percussion, and the lymphatic glands generally are enlarged. Temperature, 39.4. No abdominal distention or gurgling.

Course of disease.—Chest symptoms the most prominent; excessive cough with the expectoration of blood-stained sputum. Bowels active, the movements being fluid and yellow. Sputum contains the diplococcus of pneumonia in abundance, and other cocci; tubercle bacilli not found.

March 5.—Condition very poor. Pulse has responded to stimulation, but is of poor tension. Cough is now less prominent. Bowels active, the stools being "pea soup" in character.

March 6.—Lung symptoms less marked. Typhoid condition obtains. Delirious at times. Temperature between 39° and 40°.



U. S. Marine Hospital, port of San Francisco, Cal.
Name, J. O.; age, 46 years; disease, inflammation of the mucus membrane of the larynx.

March 7.—Condition worse. Patient in a stuperous condition. Abdomen tympanitic. Pulse of very poor quality. Tongue dry and fissured. Bowels move without the patient's knowledge. Retention of urine necessitating catherization. Sputum blood streaked. Temperature continues between 39° and 40°.

March 8.—Patient died at 3.45 o'clock, the heart being apparently swamped by toxins.

Treatment.—Stimulant throughout, whisky and strychnine. Ice and alcohol baths secured slight temporary reduction of temperature. Salol. Predigested foods.

Necropsy (*twelve hours after death*).—Rigor mortis and post-mortem lividity present. Eyes glazed and their pupils moderately and equally dilated. Some dried blood on the lips and teeth. Brain firm; weighs 1,420 grams. No gross changes visible externally. Puncta vasculosa very plainly marked on cut surface. On incising the abdominal wall, the subcutaneous fat was found to be scanty. Skeletal muscles dark colored. No gross abnormalities of position of viscera noted. Pericardium adherent throughout its serous surfaces, the adhesions being apparently of old formation. Heart weighs 330 grams. Both ventricles contain dark fluid blood and ante-mortem clots, and both are moderately dilated. Mitral orifice admits three fingers to the second joint, tricuspid orifice two. The valve flaps of the mitral and aortic valves are thickened, especially the posterior mitral flap. Myocardium is of about normal thickness, of dark red color, and fairly firm. Left pleural sac is free from adhesions or unusual amount of fluid. Left lung weighs 600 grams. Apex of upper lobe is in a state of red hepatization, sinks in water, and is friable. The lower part is deeply congested, but floats and crepitates. There is an unusual amount of anthracotic deposit throughout the lung. Right pleural sac presents many old adhesions. Right lung weighs 540 grams, floats, crepitates, and presents on cut section black pigmentary deposits. Mediastinal glands enlarged. Great vessels normal. Omentum contains only very little fat. Spleen weighs 550 grams, is much enlarged, and its pulp is dark red and friable. Left kidney weighs 225 grams, capsule stripped easily, cut surface pale, but markings are distinct. Right kidney weighs 195 grams, and its cut surface is still paler than that of the left. Intestines generally distended. On opening the ileum Peyer's patches were found swollen and injected and a few small ones were ulcerated. Stomach appeared normal. Mesenteric glands much enlarged. Liver weighed 2,150 grams, and was abnormally friable. Bladder empty and contracted. Pancreas apparently normal.

G. W. S.
A. C. S.

New growth, malignant, glandular carcinoma.

J. F.; age, 52 years; nativity, New York; white; admitted to the United States Marine Hospital, St. Louis, Mo., November 29, 1900, and died December 26, 1900.

History.—Patient stated that he had had dyspepsia for two years, and that he had been feeling especially bad for the past six days. He complained of nausea and pain in his stomach. He had eaten very little for two days, as he became sick soon after taking food in his stomach and usually vomited it. He said he had a chancre twenty years ago, which was followed by an enlargement of the glands in the groin, sore throat, and an eruption on his body.

Physical examination.—Cervical glands enlarged; slight dullness on percussion over both lungs; the respiratory sounds are roughened, but no rales are present. A blowing murmur is heard over the apex of the heart. A tumor is felt extending from 1 inch below the xiphoid cartilage to the umbilicus. This tumor is hard and irregular in outline, and the pulsations of the aorta are transmitted through it. The spleen is slightly enlarged. The vomited matter is of a yellowish-green color, and has an acid reaction; no free or combined hydrochloric acid is present; no cells resembling cancer cells can be found by the microscope. On November 16, at 2.30 a. m., the patient vomited coffee-colored matter after an attack of severe pain. The case was thought to be one of cancer of the pylorus or duodenum, and an operation was advised, but the patient would not consent. He continued to grow worse every day, living chiefly on buttermilk, malted milk, beer, etc., and when these were not retained by the stomach he was fed by rectal enemata. He became greatly emaciated, and died of exhaustion at 4 p. m. December 26, 1900.

Necropsy (*twenty hours after death*).—Height 170 cm., abdomen boat shaped, abdominal walls 0.5 cm. thick; the muscular tissue is of a bright red color, stomach greatly dilated; gall bladder full; a large, hard swelling is present in the epigastric region. Brain: Weight, 1,350 grams; tissue normal. Heart: Weight, 249 grams; measurements, 7 by 8 by 5 cm.; thickness of wall of right ventricle, 5 mm.; of left ventricle, 1½ cm.; mitral valve insufficient. Right lung bound down to chest wall at lower portion; weight, 835 grams; measurements, 29 by 19 by 8 cm.; color, grayish red; numerous nodules, some hard and some filled with creamy matter, found throughout its substance, being especially abundant at the apex. Left lung bound down posteriorly; weight, 555 grams; measurements, 27 by 17 by 6 cm.; tissue in same condition as other lung. Spleen: Weight, 65 grams; measurements, 11 by 8 cm.; color on section, reddish brown streaked with white. Left kidney: Weight, 160 grams; measurements, 12 by 8 by 4 cm.: cortical portion 5 mm. thick, color light brown, pyramids hardly perceptible. Right kidney: Weight. 145 grams: measurements, 13 by 8 by 4 cm.; tissue in same condition as in other kidney. Mesenteric glands enlarged and some filled with yellowish matter. The pyloric opening of the stomach is patulous, but the lower portion of the duodenum and the head of the pancreas are bound down tightly to the aorta and vertebral column by dense fibrous tissue. The walls of the intestines are thickened, but the lumen of the canal, although greatly contracted, is still open. A microscopical section was made of the tumor, and it was found to be composed of dense fibrous stroma with spaces here and there filled with epithelial cells.

W. G. S.

Enteric fever: asthenia.

L. A.; age, 38; nativity, Norway; admitted to the United States Marine Hospital, Chicago, Ill., October 7, 1900: died October 9, 1900.

History.—The history obtained from relatives set forth that patient had been sick for a month, and that immediately before that time he fell from a height of 10 feet and struck on his head. On admission the patient was in a precarious condition. The bodily condition was that of extreme emaciation, and mentally he was very cloudy. The pulse was 94 per minute and very feeble; respiration 18, and shallow, and the temperature was 36½° C. Tongue dry and covered with a brownish deposit; voice was feeble and mental acts very slow. Patient said he had been suffering from diarrhea for several weeks, but that bowels had not moved in the past two days. An enema administered was followed by the escape of a large amount of dark, offensive, semifluid material resembling changed blood. The general aspect was that of a neglected case of typhoid. Patient seemed to have been starved. The subcutaneous fat was entirely absorbed and the skin had lost most of its normal elasticity. The hands and feet were cold, abdomen retracted; the rim of pelvis, clavicles, and the bony framework generally appeared very prominent. There were deep depressions above clavicles. The face was sunburned and the neck covered with sudamina. On the anterior surface of the body and arms was an eruption under the skin much resembling the early stages of prurigo. The pressure of the stethoscope left a blanched circle on the skin which faded very slowly. There existed a semirigid state of the whole muscular system. Chest examination revealed the absence of râles and dullness in the lungs; heart sounds normal, though very feeble. The urine was acid, pale yellow, turbid, contained leucocytes, fragments of squamous and ciliated epithelium, calcium oxalate crystals, typical diazo reaction shown. The treatment employed was forced nutrition and stimulation, the latter embracing the use of whisky, strychnia sulphate in maximum doses and frequently repeated. To these agents patient gave no response. The night after admission he went into a state of collapse, from which he was rescued only by the hypodermic use of nitroglycerin, friction of the muscles, and heat applied over the surface of the extremities. He remained conscious until the following afternoon at 4 o'clock, when he became pulseless and comatose. Transfusion was then performed, 500 c. c. of sterile normal salt solution being introduced into median cephalic vein of the forearm. As this operation was nearing completion he regained consciousness, said he felt better, and asked for something to eat; the pulse at the same time could be felt at the wrist after it had been imperceptible for more than an hour. The breathing and facial expression also improved noticeably. A hypostatic congestion of the bases of both lungs had developed during the preceding 24 hours, dullness being present posteriorly; the temperature, which was subnormal, had risen to 38° C. Notwithstanding the immediate results of the operation performed—transfusion—the patient died an hour afterwards. His vital resources seemed absolutely exhausted, and the effect of increasing the volume of fluid in the blood vessels was only temporary.

Necropsy (sixteen hours after death).—Body that of an adult white male of medium stature; extremely emaciated. Post-mortem staining present over pendent portions of body. Post-mortem rigidity fairly well marked. Median incision showed entire absence of subcutaneous fat. Heart normal; weight 210 grams. Lungs: Right attached to the chest wall by firm and extensive adhesions; weight 345 grams. Left lung also adherent; weight 560 grams. The bases of both organs markedly congested, the right being the seat of a typical hypostatic pneumonia. Liver slightly mottled on the surface; section showed nothing abnormal; gall bladder contained a small amount of dark fluid bile; weight of liver 1.520 grams. Kidneys: Left normal; weight 170 grams; right pale and streaked with fat; weight

160 grams. Spleen small: interstitial network white and prominent: weight of organ 150 grams. Pancreas normal: weight 80 grams. Stomach empty; cavity enlarged, lining dark and congested. Intestines contained yellow, pea-soup material in small amount; the appendix had a small, firm concretion in the apex. Throughout the ilium were beautifully healed typhoid patches, presenting the characteristic shaven-beard appearance. The recovery was so nearly perfect that the ulcers left scarcely a macroscopic trace of their former existence.

F. J. T.
H. W. S.

Enteric fever.

L. T.; age, 32 years; nativity, Norway; admitted to the United States Marine Hospital, Stapleton, Staten Island, August 10, 1900; died September 13, 1900.

History.—Family history negative; past history negative; present history, complained for last week of pain in head, dizziness; felt chilly and feverish at times, sweats considerably, feels weak, and can not sleep. Morning temperature, 39.6°; pulse, 104; respiration, 36. Evening temperature, 41°; pulse, 104; respiration, 28; had typhoid stool. Treatment: Milk diet, turpentine stupes to abdomen, tub bath if temperature rises above 39, aromatic spirits ammonia 15 c. c. every three hours. Temperature evening of August 11, 1900, 37; following morning rose to 38.6, and that evening went up to 40.6, and for the following day varied between 39 and 41, with evening rise.

August 12.—Temperature normal in morning and for following two mornings, with evening rises to 40.

August 14.—Rose-colored spots on abdomen.

August 21.—Temperature has ranged from 39 to 40, being considerably reduced after tub baths. Pulse ranged from 100 to 120 and was weak and compressible. No diarrhea, bowels kept open with calomel; general condition fair; losing flesh steadily; sordes on teeth and lips.

August 21.—Has crepitant râles over right lower lobe and dullness on percussion. Diplococcus found in sputum. Cough and expectoration; R. Pill opii et plumbi, two every four hours.

August 23.—Bronchial breathing over lower lobe. Discontinue lead and opium pills; temperature rose to 41°, pulse to 140, respiration to 40; strychnine sulphate 0.002 t. i. d.

August 27.—Temperature ranged from 39° to 41°; pulse from 120 to 140; respiration to 40. Strychnine sulphate, 0.002 t. i. d.

August 27.—Temperature ranged from 39° to 41°; pulse from 120 to 140; respiration from 30 to 40. Stopped medicine, except strychnine; continued baths and milk diet. Passed large quantity of clotted blood yesterday; ice applied to abdomen, and pill opii et plumbi, one every four hours, prescribed.

August 30.—Patient weak; temperature last three days ranged from 38° to 39°; pulse from 108 to 140; respiration from 26 to 28; 7 p. m. had severe chill; temperature, 41.5°; pulse very rapid; strychnine and whisky administered; patient wrapped in sheet wrung out of ice water.

August 31.—Patient weak, but bright and feeling better; temperature in morning, 37.2°; pulse, 128; respiration, 34; had another chill toward evening; temperature rose to 40.6°; is semicomatose; blood examined for plasmodia; none found. Acid solution quinine 1, hypodermically and repeated; strychnine hypodermically administered.

September 1.—Patient rational; temperature in morning, 41°; pulse, 160; respiration, 48.

September 3.—Patient much better; temperature ranges from 38° to 39°; pulse from 100 to 112; no delirium; bowels move daily.

September 10.—Patient doing fairly well; temperature varies from 38° to 39°; lung symptoms all cleared up; inclined to be constipated; calomel given to keep bowels open; no chills or delirium.

September 12.—Solution of euthymol ordered as mouth wash; tongue heavily coated, whitish. R. Acid, hydrochloric, dil. gtts. 15, t. i. d.; milk to be predigested. ℞. Strychnine sulphate, 0.002, every two hours, alternating with spirits frumenti, which he has been taking for past two weeks.

September 12, p. m.—Temperature rose to 40°. He complains of cough and pain in side; respiration rapid and harsh; has friction sounds over lower portion of left side; pulse rapid and feeble; sponge bath given and stimulations increased, but he gradually sank, and died at 12.30 p. m. September 13, 1900.

Necropsy (twenty-four hours after death).—Body that of a male, apparently about 30 years of age. Considerable emaciation; rigor mortis only slight. Suggillations in dependent portions of body. Right thigh and leg discolored blue on all surfaces, from subcutaneous suggillations. Considerable subcutaneous fat in abdominal and thoracic wall. Skeletal muscles bright red and wasted. Anterior mediastinum, normal. Thymus remains not found. Pericardium normal in position, appearance of surface, and amount and character of contents. Left ventricle contracted and empty. Right ventricle contains fluid blood and chicken-fat clots. Left auricle, aorta, and pulmonary artery contain chicken-fat clot. Heart weighs 265 grams. Aortic valve efficient to water test. Heart muscle pale, firm, and of normal thickness; valves apparently normal. Aorta presents some calcareous deposits. Left pleura firmly bound to chest walls by adhesions. Left lung weighs 395 grams, floats and crepitates. Dependent parts congested. Cut section shows marked œdema and congestion. Upper lobe slightly œdematous. Right pleura also adhered to lung and chest wall. Right lung weighs 475 grams. Floats and crepitates; cut section normal. Great vessels of thorax normal except for calcareous degenerated plaques in the aorta. Diaphragm normal. Spleen normally placed; weighs 130 grams. Appearance, external and on cut section, normal. Left kidney normally placed. Capsule nonadherent; weighs 130 grams. Cut surface, pale and yellow markings somewhat indistinct. Right kidney resembles the left. Liver weighs 1,620 grams. Cut surface pale and of a yellowish tinge; substance somewhat friable. Pancreas normal. Great vessels of abdomen normal. Rectum contains formed fæces; mucosa with that of the entire large intestine markedly congested. Ileum mucosa congested; lower 2 feet presents sixteen ulcers varying from one-eighth to three-fourths inch in diameter. Brain somewhat congested; the meningeal fluid increased in amount. Bladder, urethra, prostate, and testicles normal.

J. M. K.
G. W. S.

B. C. H.; age, 36 years; nativity, United States of America; admitted to the marine ward of St. Mary's Hospital, Milwaukee, Wis., November 9; died November 15, 1900.

History.—Had always enjoyed good health up to fourteen days before admission. This illness began with a slight chill, followed with headaches, sweating, and prostration. He complained that he had had several bloody stools before applying for relief, but that there was no straining or pain accompanying them. On admission the fæces betokened the suffering and distress of typhoid conditions. Temperature, 40° C.; pulse, 112. On physical examination a characteristic eruption over the abdomen and pain on pressure over the right iliac region were found. Spleen and liver very much enlarged. On the 13th the abdomen became greatly distended, the liver dullness being almost obliterated; temperature, 39° C. in the evening; pulse, 104 and rising. Patient did not complain of pain at any time. Death was painless and easy.

Necropsy (*twenty-four hours after death*).—Body of a large, muscular mulatto, apparently 36 years of age. Rigor mortis marked. An incision from the thyroid cartilage to the symphysis pubis was made. Thorax: Pericardium contained a small amount of normal fluid. Heart appeared normal in size and showed externally considerable adipose tissue. Valves are competent; ante-mortem clots in the right side. Weight of the organ was 384 grams. Pleural cavities each contained about 150 c. c. straw-colored fluid, but were free of adhesions. Both lungs flabby and retracted, and are encroached upon from below by the abdominal organs. The right weighed 950 grams; the left, 930 grams. The abdominal cavity is greatly distended with gas and fluid fæcal matter. Intestines are inflated. Fluid fæcal matter, dark green in color, was found throughout the cavity. There were no signs of a peritonitis; no adhesions or plastic exudates. Plainly visible on the peritoneal aspect of the lower ileum are three dark-red stains, widely separated and about the size of a small bean. On section of the gut these appearances prove to be the characteristic lesions of the disease. Erosion of all the coats of the intestines was complete in only one of them; at the other points the peritoneum was intact. Near the ileo-cæcal junction were five or more ulcers of different sizes and shapes. In this locality the mucous membrane has suffered mainly, having been thrown into sloughing folds between the lesions. The liver was found to be enlarged; of dark slate color; it weighed 2,400 grams. Spleen is also enlarged, pulpy, and of the same color; it weighed 260 grams. Situated in the folds of the gastro-splenic omentum, wholly separate from the spleen, was an accessory organ about the size of an English walnut. The urinary and gall bladders were distended with normal fluid. Other abdominal organs proved to be normal in size and consistence.

R. B.

M. H.; white; nativity, Illinois; age, 22 years; admitted to United States Marine Hospital, Detroit, August 1, 1900; died September 3, 1900.

History.—Patient stated that he had been sick for two weeks before his admission to the hospital and gave a history of headache, dizziness, anorexia, and diarrhea. His tongue was thickly coated, broad, and flabby; spleen enlarged and tender; gurgling and tenderness in right iliac region; abdomen distended and tympanitic. The diagnosis of enteric fever was made, and subsequently confirmed by symptoms, and the "Widal reaction."

The case progressed favorably until August 19, when symptoms of congestion of right lung appeared. On August 24 copious hemorrhages from the bowel occurred, the patient voiding clots for two days, and becoming very weak and emaciated. From this he failed rapidly, with persistent high temperature until September 3, when he died.

Necropsy (eleven hours after death).—Body of medium-sized man, much emaciated, with no special marks. Rigor mortis pronounced. Calvarium removed; dura anæmic; brain slightly congested, but presented no discernible lesions; weight, 1,520 grams. Chest and abdomen opened. The right lung was slightly adherent to parietes, very much congested, and contained a number of caseous tubercles in upper lobe; weight, 950 grams. The left lung was greatly congested; weight, 720 grams. The heart contained ante-mortem clots in both sides, otherwise appeared normal; weight, 390 grams. The liver was pale, but otherwise normal in appearance; weight, 1,990 grams. Spleen normal; weight, 340 grams. Both kidneys normal; weight of right, 220 grams; left, 240 grams. Stomach greatly distended with flatus and curdled milk. Intestines: The jejunum and ileum showed much glandular inflammation with numerous ulcerations. The colon was constricted about 20 cm. above the sigmoid flexure, probably the result of an old dysentery. There was a general involvement of the intestinal and omental glands, many of them being in an advanced state of ulceration. The other organs were normal.

E. K. S.
J. G.

F. von T.; white; age, 22; nativity, Holland; admitted to the United States Marine Hospital, Baltimore, Md., June 21, 1900; died July 24, 1900. Diagnosis, enteric fever.

Family history.—Good.

Previous history.—Habits good; never had any venereal disease; had malarial fever two years ago. Present illness began with a chill on June 18, previous to which he had not felt well for five or six days. Following the chill he had fever, but no sweat; felt quite sick up to the 20th of June, when he had another severe chill, after which he felt very weak and dizzy. Was admitted the following day, June 21. On admission the patient's general condition was good; bowels constipated; abdomen distended with gas; complained of headache; temperature, 39.6°. The next morning the temperature was 37.8°, and ran an irregular course throughout the rest of the illness. Eruption absent; abdominal tenderness not marked at any time during the course of illness; characteristic typhoid stools. July 18 patient complained of slight pain in both knee joints, which, however, soon disappeared. July 22, at 9 a. m., both arms were noticed to be swollen in the region of the elbow joints and associated with constant and severe pain and tenderness, being more pronounced in the right arm. The swelling increased very rapidly throughout the day and succeeding night, and on the following morning it extended from the shoulder to the hand and was œdematous in character. The next day, July 24, the right arm was swollen to about three times its normal size; left arm was also greatly enlarged. At 12 o'clock of same day pronounced gaseous distension of the abdomen developed, followed by rapid and feeble heart action and shallow and hurried respiration. Patient died at 3.45 p. m., July 24, 1900.

Necropsy (eighteen hours after death).—Post-mortem lividity marked in dependent parts; rigor mortis disappearing; body emaciated; pupils equal and dilated. Pericardial sac opened; contained 110 c. c. of straw-colored fluid. Lungs: Right weighed 535 grams, left one 430 grams. Both lungs showed hypostatic congestion. Base of left lung adherent to chest wall posteriorly and to the diaphragm. Abdomen distended with gas; stomach empty, normal in appearance; lower part of small intestine highly inflamed, presenting numerous points of ulcerations, one of which perforated all the coats of the intestine about 15 cm. from the ileocæcal valve. No fecal matter had escaped into the abdominal cavity, nor was there any evidence of hemorrhage. Mesenteric glands were enlarged. Vermiform appendix normal. Large intestine empty and in nowise involved. Liver: Chocolate color, somewhat engorged; in other respects normal; weighed 1,975 grams. Kidneys: Left weighed 165 grams; right one 170 grams; both normal in macroscopical appearance. Other parts of the genito-urinary tract normal. Spleen weighed 700 grams, was very soft and highly congested. Calvarium removed. Brain weighed 1,585 grams, slightly anæmic, otherwise normal; meninges normal. Both arms swollen, the right more so than the left, about three times its natural size. The right arm, on section, was observed to be thoroughly engorged with a pale reddish fluid, rather thin in consistency and slightly sanguopurulent in character. All the tissues, the muscular in particular, were soft and partially liquefied, of a light greenish color and putrid odor, indicating beginning gangrene. The left arm presented the same characteristics, but in a less degree. The nature of this destructive process, together with its sudden onset and rapidity of progress, strongly suggests moist gangrene, due to venous obstruction, probably of thrombotic origin.

M. W. G.
G. P.

Inflammation of intestines; enteritis acute.

A. M.; age, 25; nativity, Nova Scotia; admitted to the marine ward of the German Hospital, Philadelphia, Pa., January 12, 1901; died January 13, 1901.

History.—Was taken sick January 9 with diarrhea. On admission complained of dizziness, a general feeling of weakness, and vomiting. Was unable to keep anything on stomach. Bowels moved 20 times during the day. He was given large doses of bismuth combined with opium, also freely stimulated, but died in collapse on the evening of the 13th.

Necropsy (twelve hours after death).—Body is that of a white male, well developed and well nourished; weight, 150 pounds; rigor mortis marked. Thorax: Pericardium normal; no adhesions, exudate, or effusion. Heart weighs 370 grams; position and shape normal; valves competent. Chordæ tendineæ and capillary muscles normal. Coronary arteries normal. A few small atheromatous patches upon the aorta. Left pleura normal. Left lung: Weight, 470 grams; color, dark reddish brown, mottled; consistency soft; hypostatic congestion in dependent portions; on section, surface moist and glistening, crepitant throughout; no cavities or tubercles; blood vessels normal; right pleura normal. Right lung: Weight, 420 grams; color, dark reddish brown, mottled; slight hypostatic congestion; on section, surface moist and glistening, crepitation throughout; consistency firm. The nerve trunks and diaphragm are normal. Abdomen: Omentum normal. Spleen normal; weight, 160 grams. Consistency firm. On section, pulp and follicles normal. Trabeculæ not increased. Kidneys: Right, weight 210 grams; left, weight 200 grams. Capsules not adherent. On section, pyramids, calices, and pelvis, normal. Supra-renal capsules normal. Urinary bladder normal; contains some urine. Rectum, duodenum, stomach normal. Gall ducts patent. Liver, weight 1,610 grams; normal. Pancreas, solar plexus, and mesentery normal. Small intestines normal in caliber and thickness. Mucous membranes congested. There are many small hemorrhagic areas. Some of the follicles stand out prominently. Large intestines normal. Great vessels normal. The brain and spinal cord were not examined.

W. A. K.
H. W. A.

INFLAMMATION OF INTESTINES.

Appendicitis—Volvulus.

A. P.; age, 21; nativity, Massachusetts; admitted to United States Marine Hospital, Stapleton, Staten Island, November 27, 1900; died December 3, 1900.

History.—The patient was of strong physique and had always been healthy. In June of the present year he had an attack of cramps and vomiting, the pain after a little becoming localized in the right iliac region. He did not consult a physician, but took a cathartic medicine and kept quiet, and in a few days the pain and sickness left him. The second attack came on while at sea, November 25, and was much like the first one. At the time of admission to the hospital, two days after the onset of the attack, the abdominal walls were tense and sensitive to pressure. Pain was felt in the right side of the abdomen, but the tension of the walls made it impossible to locate the sensitive spot exactly, and no tumor could be discovered. The bowels had been inactive since the first day. Temperature, 38; pulse, 76. Calomel was given, followed the next day by salts and an enema, but with no result. Patient vomited. An operation for appendicitis was done at 1.30 p. m., November 28. A small abscess was found, lightly confined by peritoneal adhesions. The appendix was curled on itself like a snail shell and bound together by strong adhesions, and was perforated near the tip. A spot on the cæcum within the abscess area looked very dark and almost ready to form a slough. The appendix was removed and the wound was drained with iodoform gauze. After operation the patient was nervous and restless and inclined to vomiting, but progressed fairly well for the first three days.

December 1.—The bowels moved well for the first time, and with the aid of an enema appeared to be thoroughly unloaded. The morning of December 2 the dressings were changed and the strands of gauze drainage renewed, all except one. There was only a slight purulent discharge in the dressings and the patient's condition was satisfactory at this time. In the evening of the same day he was taken suddenly with persistent vomiting, which soon became fecal in character, and the abdomen again became distended and tender. A high enema was given, the dressings were changed again and morphine administered, and the patient became easy until early the following morning, when the vomiting was renewed and his condition rapidly became hopeless. He died at 8.50 o'clock in the evening.

Necropsy (*eighteen hours after death*).—Body well nourished and muscular. Scars, apparently the result of a wet cupping, on the chest below the right clavicle. Rigor mortis. Slight post-mortem lividity. Operation wound about 8 cm. long in abdominal wall at outer border of right rectus muscle in iliac region, partly closed with sutures. No pus flowed from wound, but a small amount was in the dressings. Bones of skull very thin. Small amount of serum in the meninges of the brain. Sinuses and blood vessels moderately full of blood. The brain weighed 1,575 grams; externally and on section it presented no unusual appearances. There was a moderate amount of clear serum in the pericardial sac. The membrane was smooth and bright. The apex of the heart extended slightly to the left of the nipple in the fifth interspace. The left ventricle was contracted and empty, the right relaxed and full of dark-liquid blood. Small buff clots were in the aorta and pulmonary artery and adherent to the walls of the ventricles. The aortic valve withstood the hydrostatic test; the pulmonary artery was very relaxed and the valve would not close to the test. The valve segments in both appeared sound. The mitral orifice barely admitted the tips of two fingers. The tricuspid orifice admitted four fingers. The wall of the right ventricle was estimated 6 mm. thick and the left 20 mm. The heart weighed 385 grams. The left lung was nonadherent; it only collapsed slightly on opening the chest, and it pitted on pressure externally. The tissue crepitated and floated in water, and no consolidated tissue was found; the lung weighed 545 grams. The right lung was nonadherent and scarcely collapsed at all on opening the chest; it pitted on pressure externally; the tissue crepitated and floated in water; it was filled with dark blood, but free from any consolidation; the lung weighed 675 grams. The abdomen bulged and the intestines were enormously distended with gas. The omentum overlay the intestines and was lightly adherent to them, and a small amount of fibrinous exudate bound the coils of intestines lightly together immediately beneath the omentum and deeper in the right lumbar and iliac regions. Even at the site of the operation on the appendix the adhesions were not firm. There was no pus in the peritoneal sac, and, except for the slight fibrinous adhesions at the places named, the membrane was smooth and bright, though the intestinal walls were discolored and livid. There was a small amount of clear serum in the dependent parts of the cavity. The colon had no mesentery in the ascending or descending portions. The last portion of the ilium, to a point near the cæcum, had slipped far down into the pelvis, turning upon itself and forming a volvulus which constricted the gut between the mesentery and the brim of the pelvis at a distance of about 8 cm. from the cæcum and caused acute obstruction. The gut was held in this position by the fibrinous adhesions. At the point of constriction the wall of the gut was very dark colored in its entire thickness. The gut beyond the constriction was largely collapsed; above the constriction it was distended. The stump of the appendix was in process of healing, as was also the portion of the wound in the abdominal wall which had been sutured. The spleen was very small and weighed 98 grams. The left kidney weighed 230 grams; the right 235 grams. The capsules stripped readily. The tissue was mottled, the left being darker than the right, and the natural markings were distinct. The liver weighed 2,022 grams, and had nothing unusual in its appearance. The bladder contained a very small quantity of urine.

A. C. S.
G. W. S.

SEPTICÆMIA.

T. McD.; age, 51; nativity, Scotland; last employed on ship *Frances;* admitted to United States Marine Hospital, Stapleton, Staten Island, November 7, 1900; died November 20, 1900.

History.—The patient presented himself at the hospital with a large hernia in the left groin, which he supported with difficulty with a truss. His general appearance and physical vigor were not good, but nothing definitely wrong could be found except evidence of moderate chronic bronchitis and old, dry pleurisy. He had lately arrived from a five months' sailing voyage around the Horn, and said he had been sick a great part of the voyage, being confined to his bunk over two months with a fever. The nature of this fever could not be told. He had done some drinking after arrival in port. He was kept in hospital several days under observation. The operation for radical cure of the hernia was done under ether November 13. The following day his temperature rose to 39 and he developed a troublesome cough, and I feared pneumonia threatened. The cough subsided in a few days, but the fever continued high, without chills or sweats or much variation, and vitality soon began to fail. The wound was uncovered and it was found that there had been a great deal of extravasation of blood in the soft tissues and skin, but no suppuration was apparent in the wound. He was kept alive several days by means of stimulants and careful nursing, but died with failure of the circulation and œdema of the lungs. I am convinced that in this case the oozing and extravasation of blood were due to defective coagulation, and that the sepsis was due to auto-infection, either from purulent sputum in the bronchial tubes or possibly from germs of the foregoing fever lingering in the blood. The patient had no albuminaria before the operation, but had it toward the close of his sickness.

Necropsy (twelve hours after death).—Rigor mortis. General nourishment poor. Abdomen moderately distended, skin over same tense and discolored with yellow and livid blotches. Operation wound in left groin and scrotum. Extravasation of blood in scrotum, penis, and skin about wound. There was no pus in the wound, but the skin and subcutaneous areolar tissue over the abdomen below the navel was infiltrated with pus. Brain: There was moderate serous effusion in the meninges. The brain weighed 1,350 grams. Heart: The pericardial sac contained a small quantity of clear serum. The heart was in systole. The left auriculo-ventricular orifice barely admitted two fingers, the right one three fingers. The aortic and pulmonary valves held water. The arterial coats were pliable and natural in appearance. The heart weighed 255 grams. Lungs: The left pleural cavity was obliterated by moderately firm adhesions. The lung weighed 555 grams and floated in water. It pitted slightly on pressure externally. The tissue in the lower lobe was almost black with stagnant blood, in the upper lobe dark. The extreme apex of this lung contained hard, fibrous tissue and a number of whitish nodules a few milimeters in diameter, apparently containing lime salts. The right lung was also entirely adherent in the pleural cavity, the adhesions being firm and at the base quite thick. The lung tissue in the upper and lower lobes was intensely dark and was friable; in the middle lobe it approached somewhat more nearly to the normal appearance. Weight of lung, 650 grams. The peritoneum was smooth and glistening and free from the slightest evidence of inflammation in any part. There was a very small quantity of clear serum in the cavity. There was some extravasation of blood in the areolar tissue beneath the peritoneum about the left inguinal ring, extending downward into the pelvis. The spleen weighed 370 grams. Except for being somewhat large it had no unusual appearances, the tissue being firm but not hard. The left kidney weighed 170 grams; the tissue was pale, the cortex narrow; the capsule stripped easily. The right kidney weighed 160 grams and had the same appearance as the left. The liver weighed 1,730 grams and exhibited no unusual appearances. The gall bladder was empty of bile and was tightly contracted on two gall stones of about 2 cm. diameter each. The bladder was contracted and contained a small quantity of urine. The stomach and intestines presented no unusual appearances. The intestines were distended with gas.

A. C. S.
G. W. S.

APPENDICITIS (FULMINATING VARIETY) WITH EXTENSIVE SUBPERITONEAL SUPPURATION.

H. F.: age, 21; was admitted into the marine ward of St. Mary's Infirmary June 4. 1901, complaining of symptoms pointing to appendicitis.

He gave a history of no previous illness of any moment, but stated that on June 1, 1901, while at sea he was seized with a severe pain of a colicky character, at first fairly generally distributed over the lower abdomen, but after twenty-four hours becoming localized at the umbilicus. He had had diarrhea and occasional vomiting. On admission at 11 a. m. the pain and tenderness were fairly definitely localized over the appendix. where also there was a very definite sense of resistance. His temperature was 101° F. There was also a distinct hardening and tenderness in the middle line from the pubes to the umbilicus. Operation at 4 p. m. on day of admission. The appendix was readily reached, being situated in front of the colon. and it, with the caput cæcum coli. was entirely extraperitoneal. It appeared gangrenous at the middle and was surrounded by a curious black gelatinous material which I have never before seen in any laparotomy. The appendix was removed and the wound drained. His temperature fell after the operation, but though there was no discharge in twenty-four hours from the operation his pulse got progressively weaker. In thirty-six hours after the operation there was a profuse discharge. An attempt was made to establish free drainage. but it was felt that there was no hope, as the patient's pulse had become very weak. He died at 10 a. m. on the second day after the operation.

Necropsy (*two hours after death*).—Body of a well-nourished, muscular, young man; post-mortem lividity well marked; rigidity not yet apparent; body warm; height, 5 feet 8½ inches. A small boil is noted over front of left knee. Pupils moderately dilated, equal. Face exceedingly livid. Surgical wound, 3 inches in length, over appendical region, shows the tissue in a blue, almost gangrenous, condition. Crepitation of the abdominal wall on the right just beneath the margin of the ribs outside the rectus muscle. Abdominal wall: Fat of the abdominal wall has a greenish appearance. Below the umbilicus, on opening the sheath of the rectus muscle. the whole sheath is greenish and infiltrated. The posterior surface of the rectus is covered with greenish lymph. On opening the space of Retzius a large quantity of pus escaped, from which cultures are made. It is noted at the time of operation that a sense of resistance was given in this region, though no pain was complained of. The whole abdominal wall in the subperitoneal tissue below the umbilicus seems one continuous suppurating cavity. Omentum, etc.: On opening the peritoneum the omentum is found adherent to the intestines. The subperitoneal suppurating process has spread half way up between the umbilicus and the xyphoid cartilage. and in several places it appears as though the suppuration had penetrated from outside; but this is doubtful, as there is a suppurative process behind the omentum in these sites. The omentum is deeply congested, especially down in the pelvis. It is adherent to the small intestines all over, and occasionally the adhesions are of a yellow character. Along the line of the transverse colon and between the layers of the omentum are similar yellow deposits. The liver is adherent to the omentum, hepatic flexure of the colon, gall bladder, and pyloric end of the stomach, as well as to the lesser omentum, by a similar exudation of a yellowish character. Old adhesions, thoroughly vascularized, exist between the underside of the gall bladder and omentum. The peritoneum on the posterior wall of the abdomen is extensively infiltrated with small suppurative areas. The small intestines, especially where in contact with the pelvic peritoneum or omentum, show areas of deep congestion. The ileum, at distances of approximately 6 and 18 inches from the ileocæcal junction, and the sigmoid flexure are bound down by pale yellow recent adhesions. The appendix, which was found in operation to lie in front of the cæcum, has been entirely removed (was completely extraperitoneal). Its base is gangrenous. Pus extends behind the cæcum in the peritoneal tissue up as high as the liver and on to the under surface of the diaphragm. It passes down into the pelvis and runs along the ureter. crosses over in front of the aorta, and spreads along the left ureter and inferior mesenteric vessels. It appears to have spread up along the mesentery of the rectum and other structures, passing down into the subperitoneal tissues. Right lung: Old pleuritic adhesions over the apex, hypostatic congestion of lower lobe, otherwise same as left organ. Spleen deeply congested, hemorrhagic in small points; considerable hæmic pigment in granules scattered about. Psoas muscle also contains pus, although the right muscle seems to have escaped. The pyogenic process is more advanced in pelvis behind the rectum and around the bladder than anywhere else. the whole tissue in front of the bladder being full of thick yellow pus. Stomach and small intestines appear healthy, except for lesions above mentioned. Large intestine: Caput cæcum coli is somewhat injected, but otherwise appears normal, except as above stated.

The opening of the appendix is slightly reddened and closed by the catgut ligature about the mucosa. In the colon, especially at the splenic flexure, the solitary glands are very prominent, and the bowel has a greenish look. Rest of large intestine shows nothing abnormal. Spleen is enlarged, soft, deeply congested; Malpighian bodies prominent. Liver: Gall bladder is distended with bile. The liver is pale yellow in color and deeply congested; otherwise normal. The bile is excessively thick from mucus and abundant. Left kidney: A dark (black) gelatinous material surrounds the kidney; the organ is deeply congested; otherwise appears normal. Right kidney: Surrounded by fairly healthy tissue; otherwise similar to left organ; small. Pancreas appears normal. Chest: The pericardium contains no fluid. Heart: The right auricle is full of dark blood-clot. The ventricles and left auricle are empty. Aortic and pulmonary valves are competent (water test). Heart appears normal. Left lung: Lower lobe deeply congested (hypostatic); otherwise normal. Liver deeply congested; cells cloudy, swelling, but little pigment. Colon slight thickening of mucosa from round-cell infiltration; no involvement of peritoneal layer of section. Lungs deeply congested with interstitial hemorrhage; some hemorrhage into air spaces; hæmic and external pigmentation. Heart not markedly involved; a few fibers swollen and granular; moderate congestion. Aorta not altered.

Cultures made from the region of the appendix, the pus in the space of Retzius, and the blackish gelatinous tissue around the left kidney showed almost pure growths of a bacillus which does not correspond with the bacillus of any other with which the writer or the pathologists in the State university are familiar. Experiments are being made with a view to their careful description and identification.

W. K.

PERITONITIS FOLLOWING LAPAROTOMY.

B. B.; age, 53 years; nativity, Sweden; was admitted to the United States Marine Hospital, Chelsea, Mass., May 22 and died May 30, 1901.

History.—A diagnosis of retro-peritoneal growth, probably adenoma, having been arrived at a laparotomy was performed and two large growths enucleated from the ischiorectal and post-iliac region. There was considerable hemorrhage which was arrested by gauze packing, and normal salt solution was injected. Patient reacted very well, although there was considerable shock and a temperature of 39° C. A good deal of nausea was experienced for which cracked ice and tincture iodine gtt. i. was ordered.

May 26.—Up to this time patient had made satisfactory progress, when he began to suffer from nausea and vomiting. He could retain some milk at times—the quantity of milk was small and one-third lime water.

There being evidence of abdominal distention, a rectal tube was introduced as high as possible from which passed considerable gas. An enema was given at the same time, but was not returned. Teaspoonful doses of magnesium sulphate were then ordered every hour for three hours.

May 29.—Patient in very poor condition. Bandage being very tight, it was decided to renew dressing. Wound was in an excellent condition. Abdomen distended with gas, but not tender on pressure, nor did the patient complain of pain. The only evidence of peritonitis was the distention and the generally collapsed appearance of the patient. Vomiting continued at intervals.

Necropsy (twelve hours after death).—Eyes and cheeks sunken; ecchymosis around wound, penis, and scrotum; cyanotic condition of finger nails; rigor mortis very marked. The incision is situated about 5 cm. to the right of the umbilicus, beginning at a point 12 cm. above the level of the umbilicus and extending downward to a point 2 cm. above Poupart's ligament. This incision is about 50 cm. long. In the lower corner of wound there was an abscess, containing about 15 c. c. of pus, extending down into the scrotum, external to the cord. Cord is swollen and shows signs of ecchymosis. Pericardium is normal and contains about 50 c. c. of turbid fluid. Heart weighs 350 grams; cavities filled with antemortem clots; valves normal. Right lung weighs 680 grams, and shows signs of hypostatic congestion. Left lung weighs 570 grams, also shows signs of hypostatic congestion, and was adherent on its diaphragmatic surface to the pleura. On opening wound the intestines were found adherent to some muscular tissue and greatly distended with gas. Omentum is adherent to parietal wall. The peritoneal layer of the small intestines in the region of the wound is inflamed, and numerous adhesions are formed. Peritoneum is inflamed under the wound and in the left iliac region. Abdominal cavity is filled with bloody serum, and there are signs of a general peritonitis. Gall bladder contains about 30 c. c. of bile and is normal. Liver weighs 1,880 grams and slightly congested, otherwise normal. Left kidney weighs 90 grams and was filled with soft putty-like mass. Right kidney weighs 260 grams and was normal. Spleen weighs 260 grams; was bound down by adhesions; capsule was adherent. Bladder was friable and contained about 50 c. c. of turbid fluid, containing cheesy masses similar to those found in the left kidney. Brain weighs 1,490 grams and is normal.

F. I.

Wound of parietes of abdomen, penetrating, incised, peritonitis.

W. T. (colored); age, 31; nativity, Virginia; admitted to the United States Marine Hospital, Evansville, Ind., February 3, 1901; died February 7, 1901.

Clinical history.—On admission (7.15 p. m.) he stated that at 11 o'clock a. m. on the day before he had received a stab wound of the abdomen while on the boat up Green River near Bowling Green, Ky. He received medical attention at once. Patient was anæsthetized; wound investigated; no injury to intestines found; wound sutured and dressing applied. On examining the patient a wound about 1 cm. long was found just to the left and a little above the navel. Patient seemed to be in good condition; no fever; not much pain, and that just around wound. He could handle himself pretty well. Pulse was good, and patient's heart and lungs were normal. Wound was dressed. The next day he felt better. Pain and tenderness was less. That night he vomited a little, and at 9.30 p. m. he had a free voluntary action of the bowels. This made him feel much better. He took milk, beef tea, and a little whisky during the 5th.

Next morning he took a turn for the worse; abdomen enlarged and became tense, and pain increased. He vomited considerable. Two enemata produced free action of bowels, which relieved him for only a short time. Arrangements were made for a laparotomy, which was begun at 6 p. m. on February 6. An incision about 13 cm. long was made, with its center at the site of the original stab wound. Some dark-colored blood was found in the abdominal cavity. The intestines just under the wound were bound together by adhesions. A small pocket of thin pus was found about 5 cm. down. This and the blood were carefully mopped out, and then the cavity was flushed with a decinormal salt solution at 37° C. No point of bleeding was found, and there was no wound of the intestines. The abdominal cavity was given another flushing with the salt solution, and the wound closed with deep and superficial sutures, two gauze drainage strips being left in at the lowest end of the wound. Patient was put to bed, and hot-water bags put about him and stimulants by hypodermic method given. He suffered a little from shock. The next morning he was not so well. He grew worse and died at 12 o'clock noon February 7, 1901.

Necropsy (twenty-two hours after death).—Body that of a well-developed negro; nutrition good; pupils dilated; rigor mortis marked. Heart: Weight, 367 grams; normal. Right lung: Weight, 655 grams; congested, otherwise normal. Left lung: Weight, 520 grams; congested, otherwise normal. Liver: Weight, 1,920 grams; normal. Spleen: Weight, 140 grams; normal. Right kidney: Weight, 170 grams; normal. Left kidney: Weight, 190 grams; normal. Pancreas: Weight, 125 grams; normal. In the abdominal cavity was found some thin, dark-colored fluid (remains of normal salt solution). There had been no more hemorrhage. The original hemorrhage had in all probability been a secondary one which came from a wounded vessel in the stab wound of the abdominal parietes. Numerous adhesions (new) bound the intestines together. Most of them were about site of stab wound. No more pus was discovered. Intestines were carefully examined for a puncture, but none was found. Omentum was congested and showed a wound; other organs and tissues normal. Case was one of infection of peritoneum by point of knife carrying infection deep among the intestines.

J. H. O.

Cirrhosis of liver.

T. S.: male; white; age, 38; admitted to hospital July 26, 1900; died July 30, 1900.

History.—Patient had been a hard drinker several years prior to his illness. After five weeks' sickness, with rapidly increasing œdema of the extremities, he entered the hospital. At that time there was great general anasarca; the abdomen was somewhat distended with fluid; eyeballs protruded; conjunctivæ week injected; ecchymoses were present in eyelids and neck. His pulse was wear; heart sounds weak; expiratory murmur prolonged. Liver could not be palpated; percussion borders vague. In spite of vigorous stimulants and eliminative treatment, the anasarca increased; ecchymosis quickly appeared in both inguinal regions, extending rapidly along right side, and on July 30 patient died.

Necropsy (eleven hours after death).—Rigor mortis slight; great œdema of extremities, which ooze quantities of pure yellow fluid upon puncture with knife point; extensive ecchymoses right side of face, neck, and body, and both inguinal regions; abdomen slightly distended; conjunctivæ intensely red and congested. Calvarium removed; dura congested; sinuses distended with blood; brain congested; weight, 1,560 grams. Thorax opened; pleura extensively adherent to pericardium and to anterior and posterior chest walls. Right pleural cavity contained 500 c. c. of fluid; left, 450 c. c. Right lung intensely congested; bronchial glands enlarged; weight, 450 grams. Left lung congested and mottled on surface, otherwise normal in appearance; weight, 500 grams. The pericardium was normal in appearance, but contained an excess of fluid. The surface of the heart was pale and mottled with yellow patches. Right heart distended with clotted blood; valves and musculature normal; weight, 450 grams. Abdomen opened: cavity contained 20 c. c. of bloody, serous fluid; peritoneum greatly congested. Liver was lobulated on surface, pale red in color, hard and firm to the touch, somewhat atrophied; weight, 1,080 grams. Gall bladder distended with bile. Spleen very small and contracted, light gray in color, hard and firm to the touch, with marked resistance to cutting; weight, 90 grams. Right kidney normal in appearance; weight, 140 grams. Left kidney normal in appearance; weight, 145 grams. Pancreas normal. The stomach was empty, its mucosa greatly congested, its veins dilated. Ureters normal. Bladder empty.

B. D. P.
J. G.

Chronic interstitial nephritis.

W. S. (colored); male; age, 49 years; nativity, Missouri; admitted to the United States Marine Hospital, St. Louis, Mo., March 18, 1901, and died April 7, 1901.

Family history.—Negative.

Personal history.—Patient complained of severe pain in left side in region of the spleen and extending into axilla. He stated that he had been suffering for five days, gradually getting worse. Sputum is blood streaked. Bowels inactive.

Physical examination.—Body poorly nourished; expansion of chest diminished and evidently painful; vocal fremitus increased; flatness over entire lower lobe of left lung, in axillary line; posteriorly the area of dullness extends to lower border of scapula; inspiration and expiration roughened and prolonged; subcrepitant râles heard over all of lower lobe of left lung; vocal resonance very much increased in same area. Temperature, 39.1 C.; pulse, 114; respirations, 30. No tubercle bacilli found in sputum. Diagnosis, pneumonia lobar. Treatment: Calomel and soda, of each 0.12 gm. at once; milk diet; whisky, 100 cc. in twenty-four hours.

March 19.—Temperature, 40 C.; pulse, 140; respirations, 40 and labored. Pulse very hard and incompressible, and patient violently delirious. Norwood's tincture of veratrum viride in doses 0.1 c. c. every three hours ordered.

March 20.—Patient somewhat improved, not delirious. Pulse, 116; respirations, 28; temperature, 38 C. Veratrum viride discontinued and sedative cough mixture ordered.

March 24.—Patient much improved. Temperature, 37.4 C.; pulse, 92; respirations, 20, and resolution taking place rapidly in affected lung. All medication, save whisky, was discontinued and a more liberal diet allowed.

April 4.—Patient was practically well and his discharge was contemplated.

April 5.—5 p. m. Patient's temperature suddenly rose to 40 C.; pulse, 114; respirations, 32, and he became delirious and a few hours afterwards comatose. Posterior cervical muscles were contracted and head drawn backward. There was incontinence of feces and urine and free perspiration. He remained in this condition, despite all treatment, until 8.30 p. m. on the 7th, when death occurred. Examination of urine showed it to be about 30 per cent albumen by volume and containing quantities of uric acid and bile, also numerous tube casts.

Necropsy (fourteen hours after death).—Examination: Male; height, 162 cm.; body poorly nourished; external genital organs large; pupils contracted; rigor mortis marked; abdominal muscles contracted. Cranial cavity: Calvarium removed in usual manner; bones of skull very thick; membranes bloodless and of yellowish tinge; brain, normal in appearance, measures 19 by 15 by 7 cm., weighs 1,320 grams; lateral ventricles contain small quantity of straw-colored fluid; gray matter of brain very thin; sulci shallow. Thoracic and abdominal cavities opened. All tissues very dry and bloodless, and subcutaneous fat very yellow. Peritoneum is thickened and adherent to abdominal wall and congested in both iliac regions. Thoracic cavity: Pericardium yellowish in color, otherwise apparently normal, contains usual quantity of straw-colored fluid; heart, 13 by 9 by 5 cm., yellowish and fatty, weighs 305 grams, right side empty and flaccid, valves patent; right lung, crepitant, 23 by 12 by 5 cm., weighs 450 grams, tissues gray with yellowish tinge on section and quite dry; left lung, adherent to diaphragm and to chest wall throughout, adhesions recent, crepitant, but not sufficiently so in lower lobe, measures 22 by 15 by 5 cm. and weighs 630 grams, color on section dark red, especially in lower lobe. Abdominal cavity: Omentum small, rolled up, and congested; all contents of abdominal cavity are yellowish; spleen measures 11 by 8 by 4 cm. and weighs 160 grams, tissues are red with yellowish tinge and rather tough on section; right kidney, very small and misshaped, measures 7 by 6 by 2 cm. and weighs 65 grams, has small serous cyst at outer border, the cortex is almost entirely gone, very pale, and streaked with yellow, pyramids very well marked, but small; left kidney measures 11 by 7 by 3 cm. and weighs 135 grams, is pale in color and streaked with yellow, cuts tough, and cortex thin, pyramids prominent; stomach is normal in appearance, save yellowish color, and empty; small intestine is yellowish and very thin in many places, but there is no ulceration; mesentery is congested, and glands are uniformly enlarged; pancreas normal; bladder contains about 100 cc. of highly colored urine, and the anterior wall is congested; liver, mottled and of yellowish-red color, measures 36 by 19 by 7 cm. and weighs 1,685 grams, cuts tough, and tissues are very dry and greasy, giving knife an appearance of having been used to cut lard, yellowish tinge throughout; gall bladder contains about 25 cc. of bile, and bile duct is patent. Death was probably due to uræmic poisoning. As before stated, tissues were remarkably dry and yellow, and had the case occurred in the South during the summer or fall months the post-mortem findings might have been mistaken for those of yellow fever, except for the condition of the stomach and duodenum.

G. M. C.
W. G. S.

Chronic nephritis.

P. M.; age, 67; born in France; admitted to the United States marine ward at St. Mary's Infirmary, Galveston, Tex., January 14, 1901, suffering from chronic nephritis; died January 17, 1901.

Clinical history.—Patient was extremely weak and could speak very little English, so that a history was not obtained further than that he thought he had had fever for some days; also for some months his legs had been swollen, but he had noticed a considerable amount of swelling of his whole body during the three weeks to date of admission.

Physical examination.—The most marked feature was an extreme degree of anasarca. There was no part of his body that did not pit markedly on pressure. Even the wrists and anterior chest wall were œdematous. A dull percussion note over the abdomen and in the loins (patient being recumbent) indicated ascites, and his shortness of breath, with dull percussion note and fine crepitations over the bases of both lungs, pointed to pulmonary œdema. The heart sounds were very faint and no murmur could be distinguished. Examination of the urine showed it to be very scanty, high colored, and loaded with albumen, while microscopically it exhibited granular, epithelial, and hyaline casts in considerable numbers. Calomel, followed by a saline, was administered, with renal, cardiac, and general stimulants, but from the first treatment seemed hopeless. He died on the morning of the third day after admission.

Necropsy (*five hours after death*).—Body of a tall, muscular man; weight, 180 pounds; post-mortem rigidity absent; lividity coming on; marked general œdema; old scars as of rupial sores on ankles; recent scar on dorsum of left foot. A fatty tumor was seen in middle line 4 inches below the xiphisternum about the size of a walnut, which was found to consist of herniated subperitoneal fat. The fatty layer of the abdominal wall was 1 inch thick. Abdomen: About 1,900 c. c. straw-colored fluid in the abdominal cavity. Stomach and intestines, bladder and prostate, and abdominal glands presented no pathological appearance. The right kidney was average in size, pale in color, and its surfaces exhibited numerous small subcapsular cysts. The surface was finely granular, the capsule rather adherent, leaving a granular surface when stripped off, the cortex being slightly torn in the process of stripping. On section the cortex was seen to be decidedly diminished in thickness, the Malpighian bodies were deeply congested, the pyramids were not well marked off from the cortex, and the venæ rectæ were deeply injected. There appeared to be some parenchymatous nephritis added to a chronic interstitial inflammation. The left kidney was similar to the right. The spleen was adherent to the diaphragm; its capsule had undergone hyaline changes in small areas. It was slightly enlarged, soft, dark in color, and mottled with yellow. The Malpighian bodies were prominent and the organ rather friable. The liver was slightly enlarged, and presented a granular surface. The centers of the lobules were deeply congested, and their peripheral margins yellow and fatty (nutmeg liver). The gall bladder was full of bile and contained several gall stones. Pericardium contained about 120 c. c. straw-colored fluid. Heart markedly hypertrophied, all the cavities were filled with dark fluid blood, and very little post-mortem clot was present. The aortic and pulmonary valves were competent as tested by the water test. All the valves were healthy. The left ventricle measured 2 cm., the right ventricle 5 cm., at their thickest points. The muscle was friable, but showed no evidence of fatty degeneration. There were slight points of beginning atheroma in the aorta just above the sinuses of Valsalva. The coronary artery showed no fibroid changes. Both pleural cavities contained considerable quantities of pale, straw-colored fluid. The right lung was united to the chest wall at the apex by old adhesions, and the middle and upper lobes were adherent to each other. No signs of recent pleurisy were present. The lung was slightly pigmented. The base was deeply congested (hypostatic) and almost carnified from pressure of the fluid in the pleural cavity. The bronchial mucosa was deeply congested, the base œdematous. There was no sign of tuberculosis. The left lung was in all respects similar to the right. Old pleuritic adhesions more distributed than on the right side. The brain was not examined.

Microscopic report.—Heart muscle of left ventricle shows well marked interstitial myocarditis, a very marked variation in the size of the fibers and in many positions fragmentation of the fibers. The muscle substance shows no fatty degeneration in the parts examined, but the polar pigment of the fibers is increased. The blood vessels are injected, the capillaries full; the blood vessel walls are thickened. The pericardium shows moderate adipose tissue, and immediately below the endothelium considerable round cell infiltration. The endocardium appears normal. Muscle from a musculus papillaris of the left ventricle shows practically the same condition of the muscle substance. Muscle from the right ventricle shows (as is usual) a much greater amount of connective tissue between the vascular bundles and fibers, but otherwise is not different from that of the left ventricle. Lung: A bit of the solidified portion of the left lung was examined. It showed collapse of nearly all the air vesicles, injection of the vessels in the alveolar walls, round cell infiltration of these alveolar walls, and more or less desquamation of the alveolar epithelium. Numerous phagocytic cells bearing pigment particles scattered about in the remaining spaces and in the midst of the collapsed tissue. The liver shows considerable perilobular connective tissue overgrowth, although much of the new tissue is yet unorganized. To some degree this fibrosis extends into the lobules. The hepatic venules are almost uniformly dilated, and the central lobular zone about them is the seat of hæmatic pigment from destruction of the blood, evidently dammed back in the liver. The intercellular capillaries (biliary and hæmatic) are distended, the biliary capillaries probably by deficient movement of the bile, through the larger ducts to the exterior of the organ. The cellular construction is not markedly involved, save by a small degree of fatty infiltration near the periphery of each lobule. The artery walls are much thickened. The spleen shows much overgrowth of fibrous tissue in the capsule and trabeculæ and about the larger blood vessels. The smooth muscle tissue usually found in the trabeculæ and capsule seem relatively much diminished, evidently not increasing with the connective tissue. There is intense fibrosis of fibrous tissue. Here and there are areas of hyaline degeneration. The splenic cells and Malpighian bodies seem little disturbed save that the former are considerably pigmented by granules of hæmatic pigment. The right kidney presents marked vascular injection, both in cortex and medullary portions, with widespread round cell infiltration, best marked immediately beneath the capsule, not particularly marked about the Malpighian tufts and their capsules. There is considerable intertubular fibrous tissue and thickening of the blood-vessel walls. No evident change is discoverable in the epithelium of the collecting or discharging tubules, but in the cortex there is well-marked cloudy swelling. Some desquamation is seen, and here and there casts are encountered. Here and there are small colloid cysts. The left kidney is identical practically with the right. The stomach and intestinal wall both show no changes in the epithelium, but probably too great a round-cell infiltration in the mucosa and submucosa. The vessel walls are thickened, the vessels injected.

W. K.

Chronic Bright's disease.

J. W. (colored); age, 48; nativity, Missouri; admitted to United States Marine Hospital, St. Louis, Mo., March 27, 1901; died June 1, 1901.

History.—The patient complained of dyspnœa, pains in the chest, and a bad cough. He had been suffering more or less from these symptoms for the past six months. He was in the habit of taking four or five drinks of whisky a day, and frequently was intoxicated.

Physical examination.—The area of heart dullness is enlarged and a murmur is heard over the cardiac apex. There is dullness over the apex of the right lung, and inspiration and expiration are roughened and shortened over both lungs. Quantity of urine passed in twenty-four hours, 800 c.c. The urine contains a large quantity of albumen. The liver dullness extends from the fifth rib to a slight distance below the costal border. There is tenderness on pressure over the gall bladder. During April and May the patient suffered very much from pains in his chest and abdomen. He was unable to walk any distance on account of the great dyspnœa. There was considerable ascites and swelling of the legs, but this was controlled to a considerable degree by saline purgatives and diuretics. He had been feeling better during the latter part of May, but died very suddenly while lying in bed at 6 p. m. June 1. The evening sick call had been made only a few minutes before, and he had expressed himself as feeling comfortable.

Necropsy (fourteen hours after death).—Body 163 cm. long. Face bloated; abdomen swollen; layer of fat in abdominal walls 2 cm. thick, abdominal muscles are a pale red color; 3,000 c. c. of straw-colored fluid in pleural, peritoneal, and pericardiac cavities. Omentum contains considerable fat. Intestines of a redish gray color: appendix normal. Brain: Weight, 1,380 grams; measurements, 18½ by 15 cm., tissue apparently normal. Heart: Weight after removal of clots, 565 grams; measurements, 11 by 13 cm.; right ventricle filled with dark red clots, wall of right ventricle 5 mm. thick. Valves of right side of heart normal. Leaves of mitral valve very much roughened. Aortic valve normal. Left lung: Weight, 655 grams; color red, mottled with gray; measurements, 27 by 16 by 7 cm.; soft and crepitant; small quantity of bloody froth exudes on section. Right lung: Weight, 670 grams; measurements, 27 by 16 by 7 cm.; soft and crepitant with exception of middle lobe, which is noncrepitant and hard, feeling like "liver" to the touch; color dark red; tissue resistant to knife on section. Spleen: Weight, 180 grams; measurements, 12 by 8 cm.; tissue tough, trabeculæ prominent, color dark red. Left kidney: Weight, 230 grams; measurements, 12 by 8 cm.; pyramids prominent, tissue very tough on section, color yellowish brown. Right kidney: Weight, 225 grams; measurements, 12 by 8 cm.; condition same as left kidney. Pancreas, stomach, and intestines normal. Liver: Weight, 2,115 grams; measurements, 26 by 18 by 8 cm.; externally brown mottled with white. Internally the mottled condition is much more marked; in places there is more white than red color to the tissue. This condition exists throughout the entire liver. Tissue greasy to the touch, tough and resistant to the knife.

W. G. S.

Bright's disease, chronic nephritis, interstitial.

P. R.; age, 47 years; nativity, Denmark; admitted to the United States Marine Hospital, port of San Francisco, Cal., November 27; died December 30, 1900.

History.—The patient on entering the hospital complained of two things in particular—one was œdema of the lower extremities, the other was severe asthmatic attacks, which caused him to pass his nights very uncomfortably. He mentioned also, as facts of minor importance, that he passed a great deal of water and that for the last two years he had risen several times regularly at night to evacuate his bladder. Physical examination revealed the following: Lungs were slightly emphysematous, but otherwise apparently normal. Area of cardiac dullness enlarged, second aortic sound accentuated. Pulse rapid (116) and of very high tension. Abdomen distended, apparently contained fluid. Legs doughy and œdematous. Urine alkaline; of ammoniacal odor; specific gravity, 1.010; a high percentage of albumen; some casts, pus, and mucus. After a few days' rest in bed and medication with digitalis all the symptoms began to subside, but the digitalis gave rise to vomiting and was replaced by strophanthus, after which the vomiting ceased. December 7 the patient was seized with an acute attack of asthma, following which he expectorated a bloody, jellylike material. Following this the patient gradually improved (aside from the hemoptysis) and in a week or more was allowed to leave his bed and sit up. On December 22 another peculiar manifestation occurred. The patient was seized with a brief attack, apparently maniacal in character, during which he shouted and vociferated quite loudly, and persisted in bumping his head against the wall. The duration of this attack was about five minutes, following which the patient was as sane as usual and explained that he had been subject to such manifestations since childhood. These attacks also recurred at short intervals up to the time of his death. December 26 it was noticed that his legs were again slightly œdematous, and he was again ordered back to bed. The œdema lessened, but in a few days urgent dyspnœa set in, and on the 30th of December at 2.25 p. m. the patient died.

Necropsy (*eighteen hours after death*).—Left kidney, weighing 120 grams, flabby; normal in size. Perinephritic fat large in amount; capsule nonadherent. On section, cortex thin, pyramids well marked, and entire organ very much congested.

C. W. V.
J. M. G.

Pneumonia, lobar.

J. H. (white); age, 30 years; nativity, Indiana; admitted to the United States Marine Hospital, St. Louis, Mo., April 15, 1900, and died the same day.

History.—The patient was brought to the hospital in the ambulance in a nearly exhausted condition. His face was cyanosed and he breathed with great difficulty. The pulse was hardly perceptible at the wrist; the temperature was 37.9°, and the respirations 52. He had a loud and painful cough and the sputum was so tenacious that he was able to expectorate very little of it. The physical examination showed increased vocal fremitus and dullness on percussion over the whole of the right lung; the respiratory sounds had entirely disappeared, only a few rough râles being heard here and there. The respiratory sounds were greatly exaggerated on the left side, but the disease had not extended to this lung. 6 p. m., the patient's breathing can be heard all over the ward; pulse very weak and thready, 140 to the minute; temperature, 39.3°; respirations, 58; cyanosis increased. 11 p. m., body covered with cold perspiration; temperature, 37.1°. Death occurred at 11.30 p. m.

Necropsy (*fifteen hours after death*).—Height, 142 cm.; body well nourished, rigor mortis well marked; intestines pearly white color, filled with gas. Mesentery contains quite a quantity of fat. Brain: Weight, 1.245 grams; measurements, 15½ by 17 by 7 cm.; tissue and membranes normal. The usual quantity of straw-colored fluid is present in the pericardial sac. Heart: Weight, 385 grams; measurements, 11 by 9½ cm.; valves in good condition; right ventricle filled with dark and light clots; left ventricle contains a small white clot. Left lung: Weight, 395 grams; measurements, 20 by 15 by 6 cm.; color, dark slate; tissue crepitant throughout; reddish serum exudes on section. Right lung bound down by adhesions to chest wall and diaphragm; weight, 1.600 grams; measurements, 25 by 15½ by 8½ cm.; color, reddish brown; tissue hard throughout, especially at the apex, noncrepitant, pus exudes on section; on wiping the pus away the tissue is found to be of a dark grayish color. Spleen: Weight, 135 grams; measurements, 11 by 7 by 3 cm.; on section tissue is found to be a deep brown color. Left kidney: Weight, 165 grams; measurements, 11 by 6 by 3½ cm.; tissue normal. Right kidney: Weight, 145 grams; measurements, 11½ by 7 by 3½ cm. Bladder empty. Stomach measures 23½ by 12 cm., contains 50 c. c. of yellowish fluid and semisolid substance; mucous membrane thin and of a grayish color; the rugæ are small and not prominent. Intestines normal. Pancreas normal. Liver: Weight, 1.935 grams; measurements, 23 by 18 by 6 cm.; color, dark brown; tissue normal. Gall bladder full of bile.

W. G. S.

Chronic Bright's disease.

R. D. (colored); age, 25 years; nativity, Mississippi; admitted to the United States Marine Hospital, St. Louis, Mo., August 18, 1900; died September 2, 1900.

History.—The patient stated that he had been feeling badly about a week. He has had chilly sensations, followed by a sweat about noon every day. He has had vomiting, and his bowels have been very loose, having had 25 to 30 liquid stools a day. He has had a little headache, but no epistaxis. The patient has the appearance of one who has been seriously sick for some time. He is drowsy and only answers questions when spoken to loudly. The heart and lungs are normal. There is tenderness over the spleen, but not over the rest of the abdomen. There are no malarial organisms in the blood and Widal's reaction is absent. There is a small quantity of albumen in the urine, but the Diazo reaction is not present. Specific gravity of urine, 1.016. Tongue small, coated, with red edges; no sordes on teeth. Temperature, 40°; pulse, 96; respirations, 24. The temperature ranged between 36.2° and 39.9° until August 27, when it rose to 40.5°. On the 28th he had a chill, and the temperature rose to 40.9°, but at 5 a. m. on the 29th it was normal and the patient was in a state of collapse; cold sweat over body and pulse imperceptible at wrist; voice husky; tongue dry and coated. He complained of pain in the upper part of the abdomen, and suffered from retching and vomiting whenever he was given anything by the mouth. The next day he was considerable better; his temperature rose to 39°, but his pulse was still weak and thready. On the 31st the temperature was subnormal, with pulse of 116 and respirations 54. On September 1 an examination of the chest showed dullness and fine crepitant râles over the base of the right lung, and the intensity of the respiratory murmur was increased over the left lung. During the day he expectorated some blood. The temperature was normal this day until 4 p. m., when it rose to 39. At 9 a. m., September 2, the temperature was still 39, the respirations 54, and the pulse too rapid to be counted. He expectorated about two mouthfuls of bright red blood. Death occurred from exhaustion at 11.35 that night.

Necropsy (*ten hours after death*).—Height, 169 cm.; body very much emaciated. Small quantity of fat in the abdominal wall; peritoneum thickened; color, grayish yellow. On sawing through the skull cap and incising the cerebral membranes a quantity of serous fluid, estimated at 100 c. c., poured out. Brain: Weight, 1,305 grams; measurements, 19 by 14 by 8 cm.; tissues apparently normal. Heart: Weight, 390 grams; measurements, 10 by 10 by 6 cm.; right ventricle contains chicken-fat clot; thickness of wall, 6 mm.; left ventricle contains reddish-white clot, extending up through mitral valve; an organized yellowish-white clot found at apex of left ventricle; valves and endocardium in good condition; thickness of wall of left ventricle, 6 mm. Left lung: Weight, 540 grams; measurements, 21 by 16 by 6 cm.; crepitant throughout; reddish color above, very dark red below. Right lung: Weight, 840 grams; measurements, 22 by 16 by 7 cm.; crepitant above, but solidified below; color dark, lower portion nearly black. Spleen: Weight, 855 grams; measurements, 14 by 9½ by 3 cm.; slate color externally, internally color reddish brown; tissue firm. Left kidney: Weight, 255 grams; measurements, 14 by 9 by 5 cm.; cortical portion 6 mm. thick; color of cortical portion reddish, with yellowish-brown spots and streaks; pyramids prominent; line of demarkation between pyramidal and cortical portions well marked. Right kidney: Weight, 210 grams; measurements, 13 by 8 by 4 cm.; cortical portion 7 mm. in thickness; color of cortical portion yellowish red, the yellow color being much more marked than in the other kidney. Stomach: Length, 22 cm.; greatest diameter, 11 cm.; mucous membranes reddish-gray color; the rest of the intestines and the appendix are apparently normal. Liver bound down to the side of the abdominal wall; weight, 1,965 grams; measurements, 28 by 22 by 8 cm.; color, reddish brown; tissue normal.

W. G. S.

Chronic nephritis.

J. J.; age, 41; nativity, Norway; transferred from Norfolk, Va., to the United States Marine Hospital, Baltimore, Md., September 23, 1900; died November 9, 1900.

History.—Admitted to hospital at Norfolk, Va., August 14, 1900. Father died of phthisis pulmonalis; cause of mother's death unknown; four sisters living and well; two sisters died twenty years ago with phthisis pulmonalis. Does not remember having any of the diseases of childhood. Had an "ulcer" on the penis eleven years ago and diphtheria six years later. Since that time has had considerable trouble with his throat. On admission to hospital at Baltimore physical examination showed a slightly accentuated second aortic sound and a somewhat increased pulse tension. Apex beat was one-half inch external to its normal point. Liver and splenic dullness somewhat increased. The temperature for the greater part of the time was subnormal, but once, on the 4th of October, going up to 39 C., and accompanied by pain in the right chest. Physical examination revealed a pleuritic friction rub. Examination of the urine showed the following: Quantity passed in twenty-four hours, 2,000 c. c.; specific gravity, 1.010; reaction, acid; color, light straw. Chemical examination: Albumen, a decided trace; sugar, bile, and blood, none; urea, 33.6 grams in twenty-four hours; chlorides, phosphates, indican, and uric acid diminished. Microscopical: A little pus and mucus and a few uric-acid crystals. Hyaline, fine and coarse granular casts in good numbers. Patient was placed on Basham's mixture, stimulants, and selected diet, but he gradually lost strength and died without additional symptoms.

Necropsy (*eight hours after death*).—Height, 5 feet 6 inches. Post-mortem lividity slight. Rigor mortis marked. Pupils normal. General nourishment fair. Pericardial sac normal. Heart contained a large ante-mortem clot in right ventricle. Walls of left ventricle somewhat hypertrophied. Aortic, mitral, tricuspid, and pulmonary valves normal. Weight, 325 grams. Lungs: The left presented near the posterior surface of the apex a cavity about the size of a chestnut and containing a very little tuberculous matter. Weight, 570 grams. The right lung was normal and weighed 760 grams. The left pleura exhibited marked diaphragmatic adhesions besides a few smaller ones in the mid-axillary line. The right pleura showed old adhesions, most marked on the posterior aspect. There was no fluid in either cavity. Liver dark in color, markedly injected, hard and resistant. Weight, 1,710 grams. Kidneys: Both showed a slightly adherent capsule, a thickened and pale cortex, pyramids somewhat paler than normal and a surface presenting an almost yellow color, except where it is relieved by the network of superficial veins. Right kidney weighed 235 grams, the left 375 grams. The spleen was very large, weighing 435 grams, hard and resistant and very dark in color. Its shape was much the same as a horseshoe minus a half of one of its arms. The dura mater was markedly thickened and in two places along the median line was adherent to the pia and the pia to the brain substance. The brain was œdematous, the gray matter noticeably thin, and the weight 1,520 grams. All the other organs were normal.

W. C. B.
G. P.

Epilepsy, acute nephritis.

E. S.; age, 21; nativity, Louisiana; admitted to United States Marine Hospital, Stapleton, Staten Island, November 5, 1900; died November 8, 1900.

History.—The patient was brought to the hospital in a dazed condition, unable to walk without support. Those who brought him said that he had had a fit a few hours before, in which he had fallen unconscious and had had a clonic convulsion according to the description. His mental condition was such as is often seen after an epileptic seizure, the patient being in a half stupor, but able to give some account of himself. He said he had had like attacks all his life. The mental condition grew worse rather than better and some delirium, or mental aberration, was apparent. He would take no medicine and only a little food and was difficult to rouse, but would sometimes get out of bed when left alone. He showed irritability when questioned. A specimen of urine could not be obtained for examination until the last day, as the patient would invariably rouse himself and go to the closet. The specimen which was finally obtained was scanty and contained a large proportion of albumen. Examination of the chest revealed nothing abnormal but some crepitant râles in a small area in the central portion of the right lung. There were no convulsions while the patient was in the hospital and the nervous manifestations were not such as to indicate uræmia, though this must have been the immediate cause of death.

Necropsy (eight hours after death).—Rigor mortis. Body well nourished and free from external blemishes. On removing the calvarium, dark blood dripped profusely from the punctate wounds made in the dura mater in stripping it from the bone, and the venous channels in the meninges were seen bulging with blood. A large quantity of very dark blood flowed from the vessels when the brain was removed. Blood oozed from the puncta vasculosa wherever the brain was incised. The lateral ventricles contained an unusual amount of fluid. The pericardial sac contained about 20 c. c. of clear serum. The heart weighed 210 grams. Both auriculo-ventricular openings admitted three fingers. The pulmonary and aortic valves held water. There was a very small buff clot in each ventricle; the blood was otherwise liquid. The left lung weighed 400 grams. The tissue was very dark and filled with blood. The right lung weighed 450 grams. The tissue was like that of the left lung, except in a small area in the middle lobe and lower border of the upper lobe, which was lighter in color, pitted on pressure externally, and exuded frothy serum from the cut surface. The spleen weighed 450 grams. The tissue was very firm and very dark red in color. The left kidney weighed 220 grams; the right 230 grams. The capsules stripped easily. The tissue of both was deep red on section, and exuded blood. The cortices and pyramids were in normal proportion. The urinary bladder was contracted and nearly empty. The pancreas weighed 70 grams. The liver weighed 1,900 grams. The stomach was shrunken and empty. There were no unusual appearances in the intestines.

A. C. S.
G. W. S.

Lobar pneumonia—Acute parenchymatous nephritis.

W. T.; age, 40; nativity, England; admitted to the United States Marine Hospital, Chicago, Ill., January 4, and died January 11, 1901.

History.—On the evening of January 1 patient had a severe chill, followed by fever and pain in the right side of chest of a sharp, cutting character. About the same time a cough began; this was at first dry and distressing, but is now attended with tenacious mucous expectoration of a rusty character. Other symptoms present were anorexia, nausea and vomiting, dyspnœa, and great prostration. The respirations were 32 per minute, pulse 118, and temperature 39° C.

Physical examination.—Expression of great distress, frequent paroxysms of cough, causing pain in sternal region; tongue was dry and skin hot. There was dullness at the base of the right lung, and bronchial breathing under the scapula. Crepitant râles were heard over the whole posterior and lateral surface of the chest on the right side. Two days after admission the base of the left lung became dull, and crepitant râles appeared; also tubular breathing. The symptoms noticed then were orthopnœa, more feeble pulse, accelerated respirations to 40 per minute, and increase of temperature to 40 C. A persistent cough caused great pain, and the sputum was of a fluid, prune-juice color. Patient was restless and changed positions frequently. On the following day 500 c. c. of dark venous blood were removed from the median basilic vein of the left forearm and 500 c. c. of normal saline solution introduced. This operation gave the patient great relief. All the symptoms improved promptly, and the dullness which was present in the base of the left lung greatly diminished. Patient was able to lie on his back for the first time in twenty-four hours, and was able to breathe more easily. A urinalysis revealed the following: (*a*) Chemical—color dark reddish, reaction acid, sediment whitish flocculent, albumen present in moderate amount, blood present, chlorides absent, diazo reaction positive; (*b*) microscopic—an enormous number of granular casts, squamous epithelium, a few hyaline casts, red blood cells, and a small amount of pus in the uncentrifugalized sediment. Quantity of urine for twenty-four hours, 1,300 c. c. Patient continued in an improved condition for two days after the blood letting and transfusion, but after passing the seventh and ninth days of the disease the lungs showed no tendency to clear up; on the contrary, extension into the upper lobe of the right and into the middle of the left lung occurred. The crepitant râles gave way to subcrepitant râles, and air entered the involved portions of the lung, but the temperature persisted at 39 C. The respirations over the anterior part of the chest were of a very harsh and loud character. Patient had several violent attacks of hiccough, and early in the disease vomiting seriously interfered with the plan of medication and nourishment. Patient was of a vigorous constitution, though something of a drinker. Even on the eleventh day of the disease the crisis failed to occur. The respirations increased to 40 per minute, the pulse to 140, and the temperature to 39 C. The extremities became livid and death supervened the seventh day after admission.

The treatment, other than that indicated, was symptomatic, embracing the use of ammon. carb. in .6 gm. doses, diluted with whisky 20 c. c., t. i. d. This had to be discontinued in a short time on account of the vomiting which it seemed to induce. Cocain hydrochlor. in .008 doses failed to relieve two violent attacks of singultus. This distressing symptom subsided each time promptly under amyl nitrite by inhalation. Cathartics were employed to relieve constipation, and acetanilid was used cautiously to relieve pyrexia. To sustain the heart strych. sulph. in .002 doses was employed hypodermically every 4 to 6 hours, as necessary.

Necropsy (*three hours after death*).—Body that of an adult white male, apparently 40 years of age, well developed and nourished. Lividity most marked over pendant portions of body. Rigidity in lower extremities. The body was warm. The median incision revealed a liberal amount of subcutaneous fat. Chest: Pericardium normal. The heart weighed 320 grams, and the ventricles were filled with white ante-mortem clots; valves normal, though a few atheromatous plaques occupied the aorta. The myocardium was normal. The right lung weighed 1,580 grams, the left 730. The two upper lobes of the right were covered anteriorly with a thick fibrous clot, and the same formation occupied the extreme lower margin of the right base anteriorly. All the lobes of both lungs were agglutinated by recent lymph. The whole right lung was carnified, stage of red hepatization, a shade of gray being noticeable in places. A small abscess occupied the extreme apex of the right lung, and the tissue surrounding it was soft and infiltrated. No portion of this lung would float in water. The lower lobe of the left lung showed pneumonic consolidation, stage of red hepatization. The upper lobe was congested throughout, though crepitant. Kidneys: The left weighed 210 grams, the right 190. The former had a small retention cyst in its upper and inner part above the pelvis. Both organs were much congested, blood escaping freely on section. The capsules were adherent in places. Liver: Weight, 1,870 grams; apparently normal, though the gall bladder was shrunken to one-fifth its normal size and contained three large impacted stones, completely occupying the cavity and partially occluding the duct. The spleen was soft and filled with blood. Weight, 220 grams. Pancreas normal and weighed 85 grams. Stomach and intestines normal.

F. J. T.
H. W. S.

CONTRIBUTED ARTICLES.

OBSERVATIONS OF SURGICAL CLINICS.

By Surg. George Tully Vaughan.

After attending the meetings of the Association of Military Surgeons and the American Medical Association in St. Paul I went to Chicago and inspected the Service there. While in Chicago I took advantage of the opportunity to visit the clinics of some of the principal surgeons, and have the honor to give a short account of what I saw.

DR. CHRISTIAN FENGER.

I first visited the clinic of Dr. Fenger, a man beloved by all who know him, and a surgeon who commands respect throughout the world where surgery is practiced. Dr. Fenger uses rubber gloves in all of his operations and makes his assistants use them. He uses ether generally as an anæsthetic. He believes in the use of iodoform, in tincture of iodine, and in carbolic acid as applications to wounds when infected. The following are some of the cases I saw him treat:

Teno-synovitis, palmar abscess, and abscess of the forearm in a woman of about 35 years of age, following an infected wound of the right thumb which had not been treated by early and thorough incision. The pus extended along the sheath of the flexor longus pollicis muscle beneath the anterior annular ligament half way up the forearm. It was opened freely above and below the annular ligament, and two rubber tubes were inserted for drainage.

An acute exacerbation in a case of appendicitis which seemed to be subsiding.—This case was a boy of about 10 years of age who had an attack of appendicitis, but when brought to Dr. Fenger the attack seemed to be subsiding and he preferred to wait for the interval before operating, so he advised him to remain in the hospital under observation, with the understanding that any aggravation of the symptoms should be the signal for operative interference. This came three days after I first saw him in the shape of pain, elevation of temperature, and acceleration of the pulse. Ether was given and McBurney's or the "gridiron" incision was made, but later it was found necessary to enlarge the wound by cutting crosswise some fibers of the internal oblique and transversalis muscles. On opening the peritoneum pus and serum with offensive odor escaped. The appendix was behind the cæcum, pointing upward, and required considerable breaking up of adhesions attended with hemorrhage in order to extricate it. It was perforated in two places near the distal end, and contained a long fecal concretion between the two openings. It was tied, cut off, the stump touched with carbolic acid, inverted, and the depression closed by means of a purse-string suture. The abscess cavity was sponged out with 5 per cent solution of carbolic acid, and the general peritoneal cavity which communicated with the abscess cavity was irrigated with normal salt solution. Two strips of iodoform gauze were then packed in, one behind the cæcum, the other in front and to its inner side, the ends hanging out of the wound, which was packed with iodoform gauze and temporarily closed by means of silkworm gut sutures introduced through all the tissues and tied in bowknots over the gauze packing. The patient's pulse was 140 during the operation, but when last heard from, several days later, he was doing well.

Ponce's operation for tuberculosis of the testis.—This operation, devised by Ponce, of Lyons, has for its object the removal of the diseased portions of the testis without removing the organ itself, for the reason that although the procreative power may be lost (it is usually destroyed by the disease before the operation) the other functions of the testis which are thought to influence metabolism, somewhat like the thyroid gland, are preserved.

Operation: With the patient under ether, the left testis was bisected longitudinally. The chief seat of the disease was the epididymis, which contained considerable cheesy material, but on the cut surfaces of the body of the organ were a number of small whitish spots which looked like tuberculous deposits. They were removed and preserved for further examination. The epididymis and vas deferens were then dissected out up to the internal abdominal ring, where it was ligated with catgut and cut off. The inguinal canal was then closed with catgut and the two halves of the testis were united by the same kind of material. Dr. Fenger intended removing the left seminal vesicle, but the patient's condition at this stage caused him to postpone this operation. This patient's chief symptoms were: Family history of tuberculosis, hardness and enlargement of the left epididymis and cord, and some pain and frequency of micturition.

Operation for removing tuberculous glands of the neck.—This is a common operation, but Dr. Fenger does it in his own peculiar way. He lays emphasis on three points: (1) Take care of the internal jugular vein by finding it and placing a temporary ligature around it at the root of the neck; this keeps the vein distended with blood, so that it can be easily recognized during the dissection and avoided. (2) Find and take care of the spinal accessory nerve, cutting of which would cause the deformity known as "winged scapula," from paralysis of the trapezius muscle. (3) Take plenty of time to do the operation skillfully and thoroughly. An average case requires about two hours to complete the operation. He makes an incision from the mastoid process to the sterno-clavicular articulation over the sterno-cleido-mastoid muscle, which is not divided.

Dr. Fenger showed a case of exstrophy of the bladder in a young man, for which he had operated first by transplanting the right ureter with a small piece of the bladder into the cæcum, later the left ureter into the sigmoid flexure, then excision of what was left of the bladder. During the operation one of the vasa deferentia was accidentally cut in two, but was immediately sewed together. The proof that union followed was afforded by seeing semen escape from the mouth of that vas—the patient, of course, being epispadiac. The kidneys seemed to be in good condition.

DR. JOHN B. MURPHY.

The name of Murphy is connected with the name of the best mechanical device for intestinal anastomosis which has ever been invented, and is known throughout the world of intestinal surgery. Dr. Murphy believes in ether and the use of rubber gloves for his assistants, seldom wearing them himself. He and his assistants have gauze tied around their heads and mouths, in order to protect the patients from dirt falling from the hair and saliva from the mouth. Operations:

Cholecyst choledochotomy.—A physician, 46 years old, of full habit, had been sick for more than a year—first from an infected wound of the finger, then jaundice and pain in the region of the liver, but no typical attack of biliary colic; his health became bad; there was some elevation of temperature and he lost considerably in weight; jaundice still present. Operation under ether. A piece of aseptic rubber plaster about 15 cm. square was carefully stuck to the skin over the site of the intended incision. This was to protect the abdominal cavity from the skin, which is handled so much during operations. The abdomen was opened through the right rectus muscle longitudinally, dividing the rubber plaster and skin with scissors (as the plaster does not cut well under the knife) and the remaining tissues with the knife. This incision was later supplemented by a transverse one outward for about 5 cm., just below the ribs. The gall bladder, thickened and contracted, was finally felt, deep down, and a mass of calculus could be felt in the common duct near the duodenum. By means of three or four long retractors, held by assistants, the walls were retracted so that the hard mass could be seen at the bottom of a deep cavity. Gauze was carefully packed around the mass and the duct was incised longitudinally over the stone. Dark bile escaped, and was mopped up as fast as it escaped. Forceps were then introduced, and a calculus about 2 cm. long and 1½ cm. in diameter, faceted on each end, was removed. Two smaller stones were removed and the opening in the duct was closed with one row of continuous catgut sutures. The gall bladder was then attacked. Two silk threads were passed through its coats and through the peritoneum, muscles, and skin on each side, the gall bladder was opened between the threads, and three calculi were removed. A large rubber drainage tube, just fitting the opening in the gall bladder, was then introduced and sewed to the edges of the bladder with catgut. A similar tube was introduced to the point where the common duct had been sutured, as a safeguard should it break open. The gauze pads and strips were all removed except three long iodoform strips. The wound was then closed with catgut continuous suture, one row for the peritoneum, one for the muscles, and a subcuticular one for the skin, leaving enough space for the tubes to project. The time of coagulability of this patient's blood, as determined just before the operation, was just five minutes. Had it been longer the operation would have been contraindicated on account of the danger from hemorrhage.

Secondary operation for gallstones.—A man, aged 43 years, had had a cholecystotomy performed on him six weeks before and 52 calculi removed. His jaundice disappeared, but there had been a continual discharge of mucus through the sinus ever since. No bile was discharged externally, so the inference was drawn that a calculus blocked the cystic duct. The operation was performed through uninfected tissues; first, the sinus leading to the gall bladder was packed with a long strip of iodoform gauze, then the abdomen was opened by a longitudinal incision through the rectus muscle to the left of the fistula, to its inner side. By palpation through this incision a stone was felt in the cystic duct and was removed by means of forceps in the sinus, aided by the finger in the abdominal cavity. The new wound was closed and the fistula left in full confidence that it would now heal.

Dr. Murphy showed three other cases of gallstones on which he had already operated.

No. 1. A man of middle age on whom a cholecystotomy had been performed two or three weeks before and gallstones removed, but one in the cystic duct, which was difficult to remove, was left, as no doubt was felt that it could be more easily removed at a later date. On examination with a probe the stone could be felt at a depth of about 7½ cm., and by means of a long speculum it was visible. It was removed by passing a long handled hook through the speculum, fixing it in the stone, and removing speculum, hook, and tenaculum all at the same time. The stone was about 1 cm. in diameter. A second smaller stone was removed in fragments.

No. 2. Cholecystostomy: A middle-aged woman operated on three weeks before, several stones removed, and the gall bladder attached to the abdominal wall, first by a row of sutures through the outer coats of the bladder some distance, say 1 cm., from the edge of the opening and the peritoneum and muscle; then a strip of iodoform gauze was carefully packed around the opening, between it and the row of sutures. A second row of sutures attached the edges of the opening in the gall bladder to the skin, thus leaving a "collar" of gauze between the two rows of sutures, which prevents adhesion forming between the bladder and abdominal wall, so that when the proper time comes for closure of the fistula the adhesions between the skin and edges of the gall bladder are cut and the gauze "collar" removed, which permits the gall bladder to retract from the abdominal wall, so that the edges come together and union and closure of the opening more readily occur. In the case under discussion the doctor cut the adhesions between skin and bladder as just described, removed the gauze "collar," and then packed iodoform gauze between the receded edges of the bladder and the abdominal wall, to permit healing without attachment to the skin.

No. 3. Cholecyst-enterostomy: This case was a man, aged 65, operated on two weeks before for obstructive jaundice, caused by cancer of the head of the pancreas. A small Murphy button was used to make an anastomosis between the gall bladder and the jejunum. The button came away in ten days, the jaundice disappeared, and the patient was improved.

Excision of right Gasserian ganglion.—This operation was performed on a man of about forty-five years of age for trifacial neuralgia of the right side. Ether was given, and the usual omega-shaped osteoplastic flap, about 7 cm. in diameter, with its neck opposite the zygoma, was made, first cutting through the soft tissues, then making a small trephine opening in order to start a Devilbiss bone cutter with which the bone was cut, aided by a chisel, in the vicinity of the zygoma. The flap was pried outward until it broke along the "neck." An artery was then ligated, the middle meningeal or a branch, and the dura carefully separated from the floor of the middle fossa—the brain being held up by metal retractors under the dura—until the third, and then the second, branch of the fifth nerve were seen entering their respective foramina. The nerves were traced to their convergence in the ganglion and the latter exposed by stripping the upper layer of dura back. The nerves were then caught up by forceps and divided with scissors at the margin of their foramina. The ganglion was then removed by rotating the two pairs of forceps which were attached to the cut nerves, bringing it out by the roots and in its entirety—showing the point where the first division broke off. There was considerable hemorrhage at this time, but it was soon controlled by pressure. The cavernous sinus did not seem to be injured. The after treatment was to pack a long strip of iodoform gauze beneath the dura, having an end projecting, by which it was to be removed in forty-eight or seventy-two hours. The osteoplastic flap was returned to its place and held there by a kangaroo tendon suture through holes drilled in the summit of the flap. The soft parts were united by a deep row of catgut and a superficial row of silkworm gut sutures except where the gauze protruded. No extra precautions were taken for the protection of the eye on that side except to keep it clean and free from foreign matter.

DR. A. J. OCHSNER.

Though a young man, Dr. Ochsner is one of Chicago's best known surgeons. He operates at the Augustana Hospital, where he has a wealth of material. Dr. Ochsner did not use gloves in the operations I saw him perform, but his assistants did.

From Dr. Ochsner's operations the following are selected as of special interest:

Cholecystostomy.—A man of fifty or sixty years had an attack of bilious colic a month ago, with slight jaundice. He was treated with olive oil and got better, but Dr. Ochsner thinks there is still a cholecystitis. Ether was given and the abdomen opened by a longitudinal incision through the right rectus muscle. The common and cystic ducts were first examined, with a negative result; then the gall bladder, in which stones were felt, and preparations were made to open it. A long strip (about $1\frac{1}{2}$ meters) of sterile gauze was packed into the abdominal cavity just below the gall bladder, other smaller strips on the sides, and finally several thin, flat, wet pads of absorbent cotton were placed under the gall bladder and next to it to catch the bile after the opening had been made. The bladder was held between two forceps, opened with a knife, and the escaping bile mopped up with cotton pads as fast as it escaped. A curette was then introduced, and a large, dark-colored calculus, in two pieces and somewhat soft, was removed. After cleaning out the gall bladder it was temporarily packed with gauze to prevent leaking and then attached to the abdominal wall by interrupted catgut sutures, passing through the walls of the gall bladder about $1\frac{3}{4}$ cm. from the edge of the opening and through the parietal peritoneum and muscle beneath. The packing in the bladder was then removed and clean iodoform gauze substituted, and the wound dressed. Dr. Ochsner prefers not to sew up a gall bladder or duct, but to provide drainage in all cases.

Epithelioma of the leg—excision.—A man between sixty and seventy years of age had long had an ulcer of the left leg, and recently an epithelioma developed on it. Under ether and the use of an Esmarch constrictor the ulcer and tumor were removed by means of the knife and chisel and the bone surface cauterized with the actual cautery. A wound was left about 20 cm. long and involving about half the circumference of the leg, the anterior, of the middle and lower thirds of the leg. Incisions were then made above and below the ulcer to relieve the œdema and cut off the venous supply to the ulcer. The parts were dressed with bichloride gauze and a large amount of cotton batting; the Esmarch constrictor was not to be removed until the patient returned to bed; the leg was to be kept straight up for a while and gradually lowered to the horizontal position.

Dr. Ochsner said the leg would get well and it was not necessary to amputate.

Dr. Ochsner stated that he had seen good results follow the use of chloride of calcium in dram doses every four to six hours for hemorrhagia. Mayo-Robson uses the same treatment for hemorrhage in jaundiced patients.

DR. M. L. HARRIS.

Dr. Harris has displayed great ingenuity in the invention of an instrument known as a "urinary segregator" which collects the urine from each ureter separately without having to resort to the difficult operation of catheterizing the ureters. The essential parts of the instrument are a double-barreled silver catheter with about as much curve as a female catheter, each capable of rotation on its horizontal axis. To this is attached a metal lever arranged so that when the catheter is in the bladder and the lever in the rectum (or vagina in the female), with the beaks of the catheter rotated outward and downward, the bladder is pressed up between the openings of the ureters, making a pouch for each ureter, into which the corresponding catheter dips. For a full description of this instrument, see The International Text-Book of Surgery, volume 2, page 567.

Dr. Harris used it quite easily and satisfactorily in the case of a female patient.

Dr. Harris and other surgeons have had very good results in the treatment of tuberculous bones and joints by opening and curetting the tuberculous foci, then stuffing them for a minute or two with gauze saturated with pure carbolic acid, then substituting gauze saturated with alcohol, and finally iodoform gauze, which is left in and changed as may be necessary.

DR. A. D. BEVAN.

Among the most promising of the younger surgeons in Chicago is Dr. Arthur D. Bevan, formerly passed assistant surgeon in the Marine-Hospital Service. Dr. Bevan has done some excellent work in connection with stone in the kidney and its detection by means of the Roentgen ray. I saw the Doctor perform an operation for prolapsus recti—a resection of the bowel—in a woman over sixty years of age. The protrusion through the anus was about 8 cm., involving the entire circumference of the gut and including all the coats except the peritoneal, which was attached at a higher point. The edges of the protruding "cuff" were caught with forceps at four equidistant points, and interrupted silk sutures were then introduced all the way around a little below the anus. The portion of the "cuff" below the sutures was then cut off, the mucous membrane united with a continuous silk suture, and the intestine returned within the sphincter.

DR. ROSWELL PARK.

Dr. Roswell Park, of Buffalo, N. Y., is too well known as original worker, teacher, and writer to need any introduction. He does not always wear gloves in operating, but requires his assistants to use them—rubber or cotton may be used. Dr. Park introduced mustard as an efficient disinfectant in preparing the hands for surgical operations. He first cleanses with soap and water, then rubs flour of mustard wet with cold water (hot water must not be used with the mustard, as it destroys the essential oil on which the germicidal properties depend) on the hands thoroughly for two or three minutes, then rinses off in solution of bichloride. As a dressing for wounds he uses subiodide of bismuth a great deal. He uses both anæsthetics, selecting chloroform or ether according to the indications.

Among the operations I saw him perform were the following:

Removal of the breast for cancer.—The usual incision, elliptical around the breast and extending into the axilla, was made. Part of the pectoralis major muscle was removed, and the axilla was quickly but carefully dissected. The wound was closed by means of three silkworm gut tension sutures and continuous subcuticular catgut. Drainage was provided by cutting a hole through the flap in the axillary region and introducing a rubber tube. Subiodide of bismuth was then dusted on the wound, a piece of gauze covered with sterilized vaseline applied next, and the usual dressing of gauze and cotton over this.

Amputation at shoulder joint.—This was the case of a veteran of the civil war, who lost his left arm just below the shoulder in 1862. For several years past he has suffered severely from neuralgic pains in the stump and sometimes extending to the chest. The stump was exquisitely sensitive, and three small hard tumors could be felt on the inner side and near the end of the stump. The bone also seemed enlarged. So it was decided best to amputate at the shoulder joint. This was done by an operation something like Larrey's, only made on the inner side, as the Doctor opened the axilla first in order to examine the nerves, which seemed to be enlarged above the tumors. Catgut ligatures and sutures were used to close the wound, drainage was provided for by a rubber tube, and subiodide of bismuth and sterilized vaseline were applied with the dressings.

THE UNITED STATES MARINE-HOSPITAL SERVICE.

By P. A. Surg. M. J. Rosenau.

The Marine-Hospital Service receives its name from the fact that it has charge of the marine hospitals which are located at our ports for the treatment of sick and disabled seamen of the merchant marine. It has by law, however, many other duties and functions, particularly the conduct of quarantine, the management of epidemics, the medical inspection of immigrants, the maintenance of a hygienic laboratory, the investigation of sanitary problems, and other matters concerning the public health.

The Marine-Hospital Service is a Bureau under the Treasury Department, and is conducted by a Surgeon-General with a staff of assistants in charge of the various divisions.

The marine hospitals are maintained by a tax imposed on tonnage. The expense of the national quarantines is paid by appropriations of Congress, and the cost of suppressing epidemics is paid from a special fund set aside by Congress for this purpose.

HISTORICAL.

Marine hospitals existed in the early days of our country under charters granted by King George III, but the Marine-Hospital Service proper dates from July 16, 1798, when Congress passed an act for the relief of sick and disabled seamen, creating a fund for this purpose designated "The Marine-Hospital fund." The benefits of these hospitals were extended to sailors in the U. S. Navy until 1811, when Congress authorized separate naval hospitals.

In 1871 the Service was reorganized and the position of Supervising Surgeon-General created. Since that time the Marine-Hospital Service has outgrown its name, for, in addition to conducting marine hospitals, Congress has from time to time imposed upon it additional duties and responsibilities, and its activities have been so extended and its functions so multiplied that its work is now that of a national board of health or public health service.

PERSONNEL.

The Marine-Hospital Service at present consists of a Surgeon-General, 29 surgeons, 21 passed assistant surgeons, and 56 assistant surgeons—107 commissioned officers, who are appointed by the President by and with the consent of the Senate. In order to become a commissioned officer of the Service it is necessary to pass a competitive examination before a board composed of officers of the Service. Officers of the Service are not appointed to any special station, but are subject to change of station at any time in compliance with orders.

There are 129 acting assistant surgeons, appointed by the Secretary of the Treasury for duty at ports where the amount of work does not justify the detail of a commissioned officer.

There is a corps of 45 pharmacists in the Service known officially as stewards. In addition to their professional work they have important executive duties.

MARINE HOSPITALS.

There are 22 United States marine hospitals and 115 additional relief stations in the various ports of the country. These hospitals are located on both the Atlantic and Pacific seaboards, on the Gulf of Mexico and the chain of Great Lakes, and at many of the larger river cities. A new hospital has lately been opened in Alaska, and relief stations have been established at San Juan and Ponce, in Porto Rico, and at Honolulu.

OVER 50,000 SEAMEN TREATED A YEAR.

The reports of the Service show that more than 50,000 sick and disabled seamen of the merchant marine are treated annually. For instance, during the past fiscal year 56,355 seamen were treated, of which number 12,904 were treated in hospitals. There were 1,580 important surgical operations performed during the year, requiring the use of anæsthetics.

A SANATORIUM FOR CONSUMPTIVES.

A sanatorium for consumptive seamen has been established at Fort Stanton, N. Mex., right in the heart of the dry, equable climate which is so beneficial for the unfortunates who have contracted this most dreadful of all modern scourges. The sanatorium was opened for the reception of patients November 18, 1899, and to April 1, 1901, there have been 144 patients admitted, transferred from the several marine hospitals, of whom 17 were discharged as recovered, 33 improved, and 17 died of tuberculosis of the lungs, the disease having advanced too far for the patients to be benefited by the change.

The sanatorium serves a double purpose. It gives the consumptive sailor the best fighting chance to recover that is known to modern science, and takes the source of infection out of the forecastle. In this way it helps check the spread of the disease. The well are protected and the sick are benefited. The sanatorium has so far been conducted with every indication of accomplishing the results anticipated.

DIVISION OF DOMESTIC QUARANTINE.

It is the duty of the division of domestic quarantine to keep infectious and contagious diseases out of the country. It is responsible for the conduct of the 15 national quarantines, and for a supervision of all the State and local quarantines.

Every vessel coming from a foreign or an infected port must pass through quarantine and have the certificate of the quarantine officer before it is admitted to any of our ports of entry. The vessel is carefully inspected as to its sanitary condition by the quarantine officer, who also examines into the health of everybody on board. The quarantine officer obtains much useful information from the bill of health and other papers which the captain of the vessel is obliged to present.

In case any one on board is suffering with a contagious disease, he is cared for in special isolated hospitals which are maintained at all national quarantine stations. During the past year 4,522 vessels were inspected at the national quarantines. Cases of yellow fever, smallpox, leprosy, scarlet fever, diphtheria, etc., were diagnosed and isolated so successfully as to keep the infection from spreading.

DIVISION OF FOREIGN AND INSULAR QUARANTINE.

In order to assist the home quarantines an inspection and information service is maintained at some of the foreign ports, especially those where epidemics exist or infectious diseases are apt to prevail. It is the duty of the officers of the Service stationed at these points to issue the bills of health to vessels leaving for the United States. They carefully examine the sanitary condition of the vessel and its passengers, especially the emigrants, who have so often carried epidemic diseases from one country to another. These officers also keep the authorities at the home ports notified of all matters abroad that might affect the public health at home.

THE SANITARY INSPECTION SERVICE.

For instance, sanitary inspectors are stationed at Hongkong and Yokohama, whose duty it is to keep plague and cholera, which are now prevailing in the Orient, from vessels bound for the United States. Sanitary inspectors are also on duty at all the Central and South American harbors where yellow fever is endemic, and they have accomplished much in keeping this fever from spreading to our country.

During the cholera epidemic in Hamburg in 1892 and 1893, and during the epidemic of plague at Glasgow last year, and at other ports of the world that have or are liable to have outbreaks of contagious disease, officers of the Marine-Hospital Service are stationed for the purpose named.

THE INSULAR QUARANTINES.

Maritime quarantines have also been established in Cuba, Porto Rico, the Philippines, and Hawaiian Islands. Very much has already been accomplished by this division of the Service in our insular possessions in helping to stamp out the endemic diseases which have so long been a scourge to some of them, and in preventing the spread of these dreaded diseases to the United States, despite the increased amount of traffic and communication which has grown up between the islands and the United States.

The doctor who battles against the microbe is not as picturesque nor as romantic a figure as the soldier who dies fighting on the field of battle, though each may be fighting to save his country against an invading foe. Bacteria are as deadly as bullets, and many a medical officer has fallen from the infection of disease in saving his fellow-men.

INTERSTATE QUARANTINES.

Congress imposed upon the Marine-Hospital Service in the law of February 15, 1893, the duty of preventing the spread of contagious and infectious diseases from one State or Territory to another State or Territory. This responsible trust has entailed an elaborate system of interstate quarantine regulations, and in order to fulfill this duty properly the Service has trained a corps of its officers in the handling of epidemics, in which work some of them have been so successful as to have gained widespread reputation as sanitarians.

DETENTION CAMPS.

The prevention of the spread of yellow fever has been one of the chief works of the Marine-Hospital Service since Congress passed the interstate quarantine law. The object of a detention camp is to permit persons to travel from an infected area without carrying the disease to healthy towns or places. A model of one of the detention camps of the Service is shown in the exhibit. Persons from yellow-fever stricken towns are received and their clothing disinfected. They are then held for a period covering the stage of incubation of the disease. After this they may go to any place without danger of spreading the infection.

AID TO OTHER SERVICES.

The Marine-Hospital Service is required by law and regulation to extend aid of a professional character to other services of the Government, especially the Life-Saving Service, the Revenue-Cutter Service, the Steamboat-Inspection Service, the Coast and Geodetic Survey, the Light-House Establishment, the Immigration Bureau, etc.

AID TO THE IMMIGRATION SERVICE.

All immigrants coming into our country must be examined by a surgeon of the Marine-Hospital Service, whose duty it is to detect those suffering from a dangerous, contagious, or loathsome disease. All such cases are either sent back to their homes or are kept isolated in a separate hospital until they are cured and free from the danger of conveying infection. Lepers under no circumstances are allowed to enter the United States, and several such are discovered and deported each year.

Any immigrant who is suffering from a disease that is apt to render him a public charge within a year must be deported unless he has family or friends to assume the responsibility of taking care of him. This class of cases formerly taxed the capacity of our almshouses and filled our public hospitals, and the enforcement of this measure has saved these institutions for the sick and needy of our own country.

Last fiscal year 448,572 immigrants were inspected medically by officers of the Marine-Hospital Service.

At New York, where so many immigrants arrive, there is a hospital solely for the care of sick immigrants who are held under observation. This branch of the Service at New York requires eight medical officers and a steward.

Medical officers of the Marine-Hospital Service stationed at Philadelphia, Boston, Baltimore, New Orleans, San Francisco, and other ports where immigrants occasionally arrive are required, in addition to their other duties, to examine them.

AID TO THE LIFE-SAVING SERVICE.

All surfmen who desire to enter the Life-Saving Service are examined by surgeons of the Marine-Hospital Service as to their physical fitness. During the past fiscal year 1,467 surfmen and keepers were examined, of whom 75 were found to be physically unfit for the arduous duties required of them.

AID TO THE REVENUE-CUTTER SERVICE.

During the past fiscal year 977 applicants for enlistment into the Revenue-Cutter Service were examined, of whom 98 were rejected. Occasionally officers of the Service are detailed as surgeons upon revenue cutters when ordered on long cruises. The officers and enlisted men of this Service are entitled to the benefits of the marine hospitals.

AID TO THE STEAMBOAT-INSPECTION SERVICE.

No person can become a licensed pilot unless he has good eyesight, and he must obtain a certificate to this effect from a marine-hospital surgeon before the license can be granted. During the past fiscal year 2,457 applicants for pilots' licenses were examined as to their eyesight, and especially as to color blindness.

No fees are charged for these examinations, nor for any other service required of officers of the Service.

DIVISION OF SANITARY REPORTS AND STATISTICS.

This division, under the charge of a medical officer of the Service, is chiefly concerned in the collection of sanitary information and in the compilation of such matter for publication, weekly, in the Public Health Reports. This publication has a circulation of about 3,500 among quarantine officers, sanitarians, boards of health, and the health authorities of our own and foreign lands. It contains information of the existence of and progress of epidemic disease, mortality tables of our own and foreign cities, and reports and information for the guidance of those engaged in work affecting the public health. For this purpose tables showing the prevalence of smallpox in the United States, and of yellow fever, cholera, and plague throughout the world, are published every week.

Our consuls are required to send monthly reports to the Surgeon-General of the health conditions and other matters of sanitary interest occurring in their consular districts. In this way the Service keeps in touch with the health conditions of the whole world.

The Public Health Reports also shows the movement of emigration and immigration and keeps track of this class of travelers, who are so apt to carry infectious disease.

HYGIENIC LABORATORY.

The hygienic laboratory is engaged in scientific work which has a particular bearing upon the public health. It is in charge of a director, who is an officer of the Service, and several assistants. The investigations of this branch of the Service consist of studies into the cause and methods of spread of infectious diseases, of the value and strength of disinfectants, of the value of vaccines, of the method of manufacture of antitoxic serums, the pollution of water supplies, etc. During the past year the hygienic laboratory made and distributed over 100,000 doses of a vaccine against bubonic plague, which were distributed to the Philippines, to Honolulu, and to San Francisco. Bulletins are issued from time to time giving the results of the work done in the laboratory.

The following list of subjects is given to illustrate the scope and character of the research work carried on in the hygienic laboratory. This list includes studies of the organisms of malarial and typhoid fevers; of the cause of smallpox and the serum therapy of that disease; the preparation of the antitoxin for diphtheria, an investigation of the pollution of the water supply of the District of Columbia; investigation of cases and suspected cases of cholera, leprosy, and plague; a report upon the ventilation of the House of Representatives; the disinfection of the railroad coach; the serum therapy of pneumonia and typhoid fever, etc.

New disinfecting apparatus of ingenuity and great value have been designed by officers of the Service on duty in the hygienic laboratory. Some of these are now used by sanitarians in all parts of the world. Congress has recognized the value of the work done by this branch of the Service in appropriating money for a new laboratory building, which is now in progress of construction, and which under the terms of the law is "for the investigation of infectious and contagious diseases and matters pertaining to the public health."

Recognizing the great importance of the subject of bacteriology in relation to the public health, it has been one of the duties of the hygienic laboratory to instruct officers of the Service and others in this science. The Service now numbers among its officers 10 skilled bacteriologists, the experience of some of whom is very wide in the study of the various infectious and contagious diseases and in the investigation of sanitary problems.

THE LEPROSY COMMISSION.

Congress passed an act for the investigation of leprosy in the United States in 1899, authorizing the appointment of a commission of medical officers of the Marine-Hospital Service to investigate the origin and prevalence of leprosy in the United States, and to report upon what legislation is necessary for the prevention of the spread of this disease.

Three officers of the Service were appointed as the members of the leprosy commission, and they have since pursued their studies on this subject and will soon present their report.

THE YELLOW-FEVER COMMISSION.

In 1897 the President appointed two officers of the Service as a commission to investigate the cause of yellow fever. The commission spent the best part of two years in scientific work in Habana and at other places where the disease prevailed. Their report has thrown much additional light upon the cause and methods of spread of yellow fever—a subject which has baffled many investigators.

THE PURVEYING DEPOT.

The purveying depot is now situated in New York and is in charge of a surgeon of the Service. Through this depot the marine hospitals and quarantine stations, both in the United States and in Habana, Cuba, Porto Rico, and to a limited extent the Philippines, have received their supplies. Purveying has also been done for the Immigration Service and the Revenue-Cutter Service. More than 11,000 packages were shipped during the past fiscal year, weighing about 600,000 pounds.

PUBLICATIONS OF THE SERVICE.

The Surgeon-General publishes annually a report in which are detailed the operations of the Service for the fiscal year. It also contains reports and articles of interest from the officers of the Service on medical and sanitary subjects.

The Public Health Reports is published weekly.

The hygienic laboratory publishes bulletins from time to time on the scientific work which it accomplishes. Some of these bulletins are upon "The viability of the bacillus pestis," "Sulphur dioxide as a germicidal agent," "Formaldehyde disinfection without apparatus," etc.

The foregoing is the merest outline of the growth, scope, and duties of the Marine-Hospital Service, the greater part of which growth has come about within the last ten years. The growth of the Service has kept pace with that of the country. With the increase of the American merchant fleet the recipients of its benefits have constantly increased in number, and in the management of its hospitals advantage has been taken of every new development of modern medicine, surgery, and hygiene. The investigation of the causes and prevention of epidemic diseases is a subject of constant study within the Service, and every day brings to light some new problem in their management and control requiring consideration and action.

The development and evolution of the Marine-Hospital Service has kept pace with the advancement of medical and sanitary science, both at home and abroad.

[NOTE: The foregoing article was prepared for distribution in pamphlet form in connection with the Marine-Hospital Service exhibit at the Pan-American Exposition, Buffalo, N. Y., 1901.]

A CASE OF APPENDICITIS, WITH OPERATION—RECOVERY.

By Actg. Asst. Surg. Robert C. Craig.

This was the sixth attack of appendicitis which the patient had had during the past three years. On July 15, 1901, while at work he was seized suddenly with severe cramps in the abdomen—so severe that he fell from the scaffold on which he was working. After a few hours he began to vomit, the cramps and vomiting continuing irregularly till his admission to the hospital, August 19, 1901. The patient had taken some castor oil and magnesia the night before his admission, so that his bowels had moved freely.

Temperature on admission 39° C. Pulse 120 per minute and feeble; high tension; greatly nauseated. Severe cramps in abdomen, which was considerably distended. Very tender, especially in the right iliac region, over McBurney's point. Right rectus muscle was very rigid; the left only slightly so. A small mass could be outlined just under McBurney's point.

A high enema was given, which relieved the patient greatly. Being a little better the next day it was decided to operate.

Operation.—An incision 7 cm. long was made obliquely over McBurney's point. The peritoneal cavity was opened carefully and the appendix found below and behind the cæcum. It was quite large and strictured about its middle, an abscess having formed at the end.

The mesentery attachment was tied off (chromacized catgut being used), and the appendix cut free therefrom. A temporary ligature of chromacized catgut was tied around the base of the appendix just beyond its attachment to the cæcum. A "cuff" of its peritoneal coat was then made, beginning one-half cm. above and extending to its base. A ligature of chromacized catgut having been tied tightly around the appendix at its base, the appendix was then cut off just above this ligature. A drop of carbolic acid was placed on its cut end and the peritoneal "cuff" brought over it and sutured, making a "hood." Loosening the temporary ligature, the base of the appendix, "hood" and all, was then invaginated into the cæcum, the peritoneal surfaces of which are brought together by this ligature being drawn tight, like a purse string. The abdominal wound was then closed by interrupted silkworm gut sutures extending the depth of the wound. An iodoform dressing was applied and the patient put to bed. The patient's temperature was normal the next day and remained so till the date of discharge, August 23, 1901. The abdominal sutures were removed the sixth day.

A CASE OF APPENDICITIS, WITH OPERATION—RECOVERY.

By Actg. Asst. Surg. Robert C. Craig.

William Quinn; age, 36; admitted to the marine ward, Mercy Hospital, Pittsburg, Pa., July 19, 1901; discharged August 23, 1901.

This was the sixth attack which this patient had had during the past six years. On July 15, 1901, while at work he was seized suddenly with severe "cramps" in the abdomen. After a few hours he began to vomit, the cramps and vomiting continuing occasionaly till his admission to the hospital on July 19, 1901. The patient had taken some castor oil and magnesia the night before, so that his bowels had moved freely.

Temperature on admission, 39° C.; pulse, 120 per minute and feeble, high tension. Greatly nauseated, vomiting every few minutes. Severe cramps in abdomen, which was considerably distended. Very tender, especially in right iliac region over McBurney's point; a small mass could be outlined at this point. A high enema was given, which gave the patient some relief. The patient being a little better the next day it was decided to operate. An incision 7 cm. long was made over McBurney's point obliquely. The peritoneal cavity was opened carefully and the appendix found below and behind the cæcum. It was very large and strictured about its middle, an abcess having formed at the distal extremity. The mesenteric attachment was tied off and the appendix cut free. A temporary ligature of chromacized catgut was tied around the base of the appendix. A "cuff" of its peritoneal coat was then made, beginning one-half cm. above and extending to its base. A ligature having been applied around its proximal extremity, the appendix was then removed, a drop of carbolic acid having been applied to the end and the peritoneal "cuff" brought over it and sutured. Loosening the temporary ligature, the base of the appendix was then invaginated into the cæcum, the peritoneal surfaces of which were finally brought together by this ligature being drawn tight. The abdominal incision was then closed by interrupted silkwork gut sutures extending the depth of the wound. Iodoform gauze dressing was applied and the patient put to bed. His temperature was normal the next morning and remained so till the date of his discharge, August 23, 1901.

The abdominal sutures were removed the sixth day.

APPENDICEAL ABSCESS—OPERATION—RECOVERY.

By Actg. Asst. Surg. ROBERT C. CRAIG.

Ed. L. Miller; age, 27; admitted to the marine ward, Mercy Hospital, Pittsburg, Pa., October 8, 1900; discharged November 29, 1900.

On admission the patient's temperature was 37.8° C., his pulse 100 per minute and very tense. He complained of diarrhea and of pain in the region of the right iliac fossa, which had lasted for two weeks without any relief. He also gave a history of previous attacks of pain in this region. Examination revealed extreme tenderness over McBurney's point, the pain being lessened by drawing up the right leg. The appendix was palpable and evidently the seat of the pain. The patient's tongue was thickly coated and his breath very foul. The treatment the first three days consisted in rest in bed and the use of purgatives, but the pain still continued. The temperature remained about the same till the night of October 11, 1900, when it suddenly jumped to 39.5° C., his pulse being 112 and very feeble. The patient vomited a fecal matter several times that night and was in a condition of semicollapse. The next morning, October 12, his temperature was 38.5° C., and his general condition about the same. A tumor was felt in the right iliac fossa and an operation considered necessary. At 10 o'clock the morning of October 12 the patient was given ether and the following operation performed:

An oblique incision 11 cm. in length was made over McBurney's point, through the skin, muscle, and fascia to the peritoneum. A search was made for the abscess to see if it could be opened extraperitoneally. This being impossible, the peritoneal cavity was opened and an abscess the size of a lemon located deep down behind the cæcum. The loops of intestine were walled aside with aseptic gauze pads and the abscess cavity was opened from above. One hundred and twenty c. c. of foul-smelling pus was gradually expressed, being absorbed by gauze sponges, which were inserted between the clean gauze pads. It was considered unwise to remove the appendix, as it was so closely blended with the abscess. After cleaning the abscess cavity, a glass drainage tube, packed around a part of its length with gauze, was inserted. The gauze pads around the loops of intestine were then removed and the wound sutured a part of its length. The abscess cavity was aspirated through the glass drainage tube every three hours the first day, then less often. About 30 c. c. of bloody pus was aspirated each time the first day, then less and less. The patient reacted well from the operation. By nighttime his temperature was 37.4° C., his pulse 86, strong and regular. He looked brighter and had no nausea. The next day the temperature was 37.4° C., in the morning and 37.6° C. in the evening; after that it was normal. The abscess cavity was walled off from the peritoneal cavity in nature's own way, and the wound filled in from below rapidly. The part of the wound that was sutured having healed, the sutures were removed the fifth day. After ten days the drainage tube was unnecessary. It had been removed three times daily after the third day and the abscess cavity and wound was cleansed by the use of hydrogen dioxide on aseptic gauze. This served as drainage and prevented the cavity from being closed too rapidly. By November 14 the entire wound had healed, requiring only an occasional dressing over the line of incision. Patient was allowed out of bed November 15, and walked about ward till date of discharge.

December 6, 1901.—The patient has been in excellent health since the operation.

STATISTICS OF THE MARINE-HOSPITAL SERVICE.

STATISTICS OF THE UNITED STATES MARINE-HOSPITAL SERVICE.

The following statistical tables are self-explanatory:

TABLE I.—COMPARATIVE TABLE OF NUMBER TREATED—1868 TO 1901.

The following tabular statement will serve to illustrate its growth since the reorganization of the Marine-Hospital Service in 1871:

Operations of the Marine-Hospital Service from July 1, 1868, to June 30, 1901.

Fiscal years.	Number of places at which relief was furnished.	Number of sick and disabled seamen furnished relief.
Prior to reorganization:		
1868	64	11,535
1869	64	11,356
1870	74	10,560
After reorganization:		
1871	72	14,256
1872	81	13,156
1873	91	13,529
1874	91	14,356
1875	94	15,009
1876	94	16,808
1877	100	15,175
1878	210	18,223
1879	210	20,922
1880	210	24,860
1881		32,613
1882		36,184
1883		40,195
1884		44,761
1885		41,714
1886		43,822
1887		45,314
1888		48,203
1889		49,518
1890		50,671
1891		52,992
1892		53,610
1893		53,317
1894		52,803
1895		52,643
1896		53,804
1897		54,477
1898		52,709
1899		55,489
1900		56,355
1901		58,381

TABLE 11.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1901.

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1900.	Admitted during the year.	Total treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1901.	Number of days relief in hospital.	Number of persons furnished office relief.	Number of times relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage tax collected.
Total	58,381	770	12,571	13,341	12,132	121	788	346,844	15,040	69,199	4,417	a$1,007,317.79	b$906,338.43
Albany, N. Y	4		4	4	4			106				197.00	
Apalachicola, Fla	64	1	17	18	17	1		220	46	77		715.00	1,712.34
Ashland, Wis	139	3	28	31	25	1	5	409	108	122		582.35	
Ashtabula, Ohio	241	1	38	39	38		1	462	202	361		713.50	
Astoria, Oreg	106	4	27	31	29	1	1	415	75	97	31	1,030.75	14,000.82
Baltimore, Md	1,897	44	454	498	441	25	32	18,737	1,399	2,060	217	23,234.38	63,093.09
Bangor, Me	114	2	27	29	26		3	733	85	99	15	1,294.95	604.86
Barnstable, Mass., and subports	159		1	1	1				158	373		369.65	27.63
Bath, Me	42								42	168		283.70	62.67
Beaufort, N. C	73		4	4	4			49	69	107	50	478.36	2.22
Beaufort, S. C	21								21	34		41.35	932.34
Belfast, Me	2								2	20		23.30	73.53
Bismarck, N. Dak	5		4	4	3		1	53	1	2		288.10	
Boothbay Harbor, Me	107		6	6	5		1	72	101	102	2	412.50	
Boston, Mass	2,725	49	593	642	585	17	40	21,798	2,083	3,288	330	35,924.15	62,276.49
Bridgeport, Conn	20	1	15	16	15		1	438	4	4		483.00	153.51
Bristol, R. I													7.14
Brownsville, Tex													24.54
Brunswick, Ga	173	3	44	47	42	3	2	964	126	153		1,486.75	10,881.12
Buffalo, N. Y	2,695	22	400	422	392	14	16	6,706	2,273	2,669	45	13,213.35	
Burlington, Iowa	17		17	17	16	1		210				158.20	190.86
Cairo, Ill	838	8	262	270	254	8	8	3,689	568	745		10,992.27	
Cambridge, Md	79		30	30	29	1		404	49	71		684.00	
Castine, Me	3								3	9		28.00	78.30
Cape Vincent, N. Y													95.13
Cedar Keys, Fla	206		1	1	1			8	205	308		316.90	2.34
Charleston, S. C	750	2	104	106	98	2	6	1,615	644	864	110	6,302.36	5,509.74
Chattanooga, Tenn	31		1	1	1			6	30	102		300.00	
Chicago, Ill	2,631	33	511	544	503	11	30	12,444	2,087	2,907	72	29,290.87	
Cincinnati, Ohio	690	14	197	211	196	3	12	6,232	479	645	14	15,901.31	
Cleveland, Ohio	1,932	29	320	349	304	11	34	11,663	1,583	2,483	67	20,141.67	252.63
Coos Bay, Oreg													12.30
Corpus Christi, Tex	22		4	4	3	1		50	18	83	15	408.35	
Crisfield, Md	103								103	157		300.00	
Darien, Ga	38								38	40		232.55	
Delaware Breakwater, Del	306	2	69	71	66	3	2	1,091	235	298	41	8,668.61	
Detroit, Mich	1,394	14	315	329	306	8	15	7,311	1,065	2,023	84	17,468.14	17.97
Dubuque, Iowa	39	2	28	30	27		3	484	9	10	15	881.82	

Duluth, Minn	361	6	51	57	52	3	2	919	304	375	32	1,040.06	
Dutch Harbor, Alaska	70		11	11	10		1	205	59	104		4,354.49	
Eastport, Me	13		1	1	1			14	12	40		72.75	871.14
Edenton, N. C	172		4	4	4			29	168	274		273.85	
Edgertown, Mass	4								4	4		7.25	117.75
Elizabeth City, N. C	46								46	66	153	250.00	
Ellsworth, Me	23								23	94	14	300.00	94.98
Erie, Pa	132	1	24	25	24	1		628	107	143		927.68	
Escanaba, Mich	121		28	28	28			526	93	93		826.00	
Eureka, Cal	44		18	18	17	1		228	26	42	16	576.02	143.91
Evansville, Ind	2,008	7	296	303	285	5	13	5,971	1,705	2,362	15	11,714.93	
Fall River, Mass													37.83
Fernandina, Fla	122		34	34	34			394	88	114		697.63	2,934.00
Fredericksburg, Va	54		7	7	6		1	95	47	108		237.53	
Fort Stanton, N. Mex	152	47	105	152	61	17	74	23,404				88,806.54	
Gallipolis, Ohio	242	3	99	102	100	1	1	1,622	140	282	13	1,974.76	
Galveston, Tex	821	10	258	268	236	9	23	6,233	553	841	77	12,122.37	34,685.49
Georgetown, S. C	303	1	74	75	73	1	1	510	228	377	8	1,272.45	
Gloucester, Mass	378	2	29	31	27	4		812	347	534	29	1,535.03	1,026.93
Grand Haven, Mich	22		3	3	2		1	77	19	52	85	428.65	
Green Bay, Wis	83		8	8	8			98	75	95		403.35	
Great Falls, Mont													9.06
Government Hospital for the Insane, Washington, D. C	34	27	7	34	2	2	30	10,821				6,979.43	
Hartford, Conn	11	1	10	11	10		1	210				170.00	
Honolulu, Hawaii	641		240	210	190	5	15	4,684	431	739	74	9,508.84	22,160.39
Jacksonville, Fla	327	2	133	135	132		3	1,966	192	250	29	2,475.55	661.11
Juneau, Alaska	144		44	44	43	1		409	100	363	1	18,275.37	
Key West, Fla	1,523	12	110	122	108	7	7	3,876	1,401	2,624	32	11,861.13	1,990.08
La Crosse, Wis	138	1	27	28	26	2		369	110	215	3	980.54	
Laboratory, Washington, D. C												14,124.64	
Little Rock, Ark	18		2	2	2			42	16	37		266.60	
Los Angeles, Cal	122	3	61	64	59		5	1,318	58	138		1,909.50	1,479.72
Louisville, Ky	676	6	221	227	213	4	10	4,632	449	710	15	12,286.84	
Ludington, Mich	73		16	16	16			199	57	75		358.26	
Machias, Me	60	1	19	20	18	1	1	558	40	50		881.51	335.07
Manistee, Mich	102	1	8	9	9			239	93	134	22	549.00	
Manitowoc, Wis	26		13	13	11	1	1	148	13	20		327.89	
Marblehead, Mass													28.68
Marquette, Mich	91		13	13	12		1	326	78	84		701.03	
Marshfield, Oreg	93	1	24	25	24	1		326	68	161	27	819.20	
Memphis, Tenn	2,199	16	530	546	528	11	7	6,611	1,653	2,180	19	14,828.64	
Menominee, Mich	35		7	7	5		2	103	28	40	1	429.32	
Milwaukee, Wis	1,030	5	155	160	149	6	5	2,612	870	1,396	123	5,970.54	
Mobile, Ala	1,106	13	318	331	312	8	11	7,713	775	1,004	139	18,848.52	18,265.80
Nashville, Tenn	54		5	5	5			54	49	108	11	387.53	
Natchez, Miss	18		5	5	5			85	13	14		613.00	
Newark, N. J													481.83
New Bedford, Mass	80		6	6	4	1	1	119	74	127		346.60	159.33
Newbern, N. C	325		24	24	22	1	1	233	301	617		891.30	

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[a] Miscellaneous, $58,020.03.

[b] Amount actually deposited in the Treasury, $904,046.18.

TABLE 11.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1901—Continued.

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1900.	Admitted during the year.	Total treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1901.	Number of days relief in hospital.	Number of persons furnished office relief.	Number of times relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage tax collected
New Haven, Conn	52	1	36	37	34	1	2	789	15	17	37	$1,257.76	$100.44
New London, Conn	109		16	16	14	1	1	327	93	93		1,010.65	21.60
New Orleans, La	2,363	32	448	480	452	11	17	11,448	1,883	2,287		30,269.20	86,307.20
Newport, Ark	153		20	20	18	1	1	169	133	224		558.13	
Newport, R. I	64	3	27	30	28	1	1	672	34	40	46	1,355.80	52.62
Newport News, Va	46								46	46		232.60	19,529.13
Newport, Vt													58.50
New York, N. Y	4,690	92	1,035	1,127	994	47	86	36,403	3,563	5,875	655	67,847.50	294,291.77
Norfolk, Va	1,851	19	329	348	324	13	11	4,721	1,503	1,934	117	7,498.54	14,151.00
Ogdensburg, N. Y	62		4	4	3		1	70	58	161		438.85	1,182.36
Oswego, N. Y	76		5	5	4	1		103	71	156		395.78	931.89
Paducah, Ky	147								147	322		497.29	
Pensacola, Fla	134	6	128	134	125	4	5	2,053				3,031.00	26,133.15
Perth Amboy, N. J													584.55
Philadelphia, Pa	1,588	20	427	447	419	11	17	9,465	1,141	1,557	304	20,997.67	57,994.92
Pittsburg, Pa	1,451	8	269	277	252	11	14	5,011	1,174	1,523	22	1,052.02	
Plattsburg, N. Y													3,320.22
Plymouth, Mass													10.95
Ponce, P. R	48		10	10	10			66	38	45		99.00	
Port Huron, Mich	198	1	10	11	8	2	1	188	187	416		488.00	
Portland, Me	684	19	210	229	204	5	20	7,497	455	627	70	14,714.52	22,179.90
Portland, Oreg	436	5	77	82	77	1	4	1,852	354	720	54	1,119.51	
Port Tampa, Fla	148	3	81	84	80	2	2	1,619	64	199		2,289.25	
Portsmouth, N. H	30		7	7	7			63	23	25	29	270.72	5.91
Port Townsend, Wash	623	29	427	456	411	11	34	16,732	167	368	8	19,200.38	26,561.22
Providence, R. I	451	1	57	58	57	1		948	393	815	7	1,971.49	175.89
Purveying depot, New York, N. Y												180,618.92	
Richmond, Va	53	1	14	15	14		1	219	38	38		528.30	15.18
Rochester, N. Y													569.58
Rockland, Me	196		2	2	1	1		15	194	561	17	578.36	
Saco, Me													2.94
Saginaw, Mich	171		37	37	36	1		680	134	194	9	850.13	
Sag Harbor, N. Y	7								7	11		22.00	74.74
Salem, Mass	18		1	1	1			37	17	17		77.50	283.32
San Diego, Cal	53	1	8	9	9			266	44	71	1	5,063.59	2,968.11
Sandusky, Ohio	54		10	10	9		1	152	44	71	21	353.83	
San Francisco, Cal	3,017	57	803	860	765	31	64	27,535	2,157	4,273	625	36,168.64	32,263.62
San Juan, P. R	37		13	13	13			194	24	43	5	143.20	
St. Louis, Mo	2,037	29	396	425	387	22	16	9,111	1,612	2,252	25	20,183.74	
St. Marys, Ga													16.20

St. Paul, Minn	26	1	6	7	6	1		179	19	27		421.90	
Sault Ste. Marie, Mich	292	4	119	123	109	4	10	2,276	169	212		2,932.66	
Savannah, Ga	966	10	201	211	194	4	13	4,429	755	1,056	12	7,472.89	17,789.10
Seattle, Wash	1,642	2	82	84	77	5	2	1,867	1,558	2,230	200	6,061.93	
Shreveport, La	125		30	30	30			586	95	520		1,115.16	
Shieldsboro, Miss													10,438.11
Sitka, Alaska	1		1	1	1			60				1.80	3,112.21
Solomons, Md	379		16	16	15	1		176	363	402	1	607.98	
Stonington, Conn													33.69
Sturgeon Bay, Wis	38		1	1		1		4	37	65	42	360.35	
Superior, Wis	214	3	29	32	26	2	4	598	182	333		911.06	
Tacoma, Wash	174		48	48	43	2	3	685	126	148		1,031.50	
Tappahannock, Va	384	1	172	173	167	4	2	1,790	211	257		3,264.25	
Tampa, Fla													4,345.89
Toledo, Ohio	274	4	94	98	89	2	7	1,408	176	480	1	1,451.68	50.43
Vicksburg, Miss	31		31	31	28	2	1	364				639.50	
Vineyard Haven, Mass	227	3	76	79	72	2	5	2,779	148	159	10	10,047.99	
Waldoboro, Me													489.48
Washingtou, D. C	143	2	29	31	30	1		1,010	112	136		34,953.32	144.93
Wheeling, W. Va	40		19	19	17	1	1	284	21	29		567.65	
Wilmington, N. C	543	10	127	137	125	3	9	3,160	406	518	50	10,684.96	3,001.35
Wilmington, Del	2								2	28		28.00	8,154.36
Wiscasset, Me													298.05
Cape Charles Quarantine	6								6	6		(a)	
Delaware Breakwater Quarantine	2		2	2	2								
Gulf Quarantine	4		4	4	4			16			3		
Port Townsend Quarantine	14		14	14	14			590					
Reedy Island Quarantine	4		4	4	4			26					
San Francisco Quarantine	9	3	6	9	6	3		198					
Savannah Quarantine	14		3	3	2		1	81	11	23			
South Atlantic Quarantine	6								6	22			
Tortugas Quarantine	11		11	11	11			86					

[a] Expenditures for quarantine stations appear elsewhere in financial statement.

TABLE III.—SUMMARY OF PHYSICAL EXAMINATIONS OF SEAMEN MADE BY OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, YEAR ENDED JUNE 30, 1901.

Summary of examinations and causes of rejection.	Total.	Pilots.	Revenue-Cutter Service.	Life-Saving Service.	Merchant marine.	Coast-Survey Service.	Marine-Hospital Service.	Light-House Service.	United States naval colliers.
Summary of examinations:									
Total number examined	4,417	1,644	932	1,445	310	30	22	10	24
Number passed	4,074	1,550	777	1,364	310	21	21	8	23
Number rejected	343	94	155	81	......	9	1	2	1
Causes of rejection:									
Ankylosis of wrist	......	......	1	......	......	......	......	......	......
Bronchitis	......	......	2	1	......	......	......	......	......
Bright's disease	......	......	5	2	......	......	......	......	......
Chancre	......	......	2	1	......	......	......	......	......
Color blindness	......	53	14	11	......	......	......	......	......
Consolidation of right lung	......	......	2	1	......	......	......	......	......
Deafness	......	1	3	5	......	......	......	1	......
Debility	......	1	......	1	......	1	......	1	......
Deformity of leg	......	......	1	1	......	1	......	......	......
Degeneration of spinal cord	......	......	......	1	......	......	......	......	......
Diarrhea	......	......	2	1	......	......	......	......	......
Disease of heart—									
Fatty degeneration	......	2	3	1	......	1	......	......	......
Hypertrophy	......	1	1	2	......	......	......	......	......
Mitral murmur	......	......	1	1	......	......	......	......	......
Mitral insufficiency	......	1	2	2	......	......	......	......	......
Mitral regurgitation	......	1	3	......	......	......	......	......	......
Valvular	......	......	7	2	......	......	......	......	......
Enlarged tonsils	......	......	3	2	......	......	......	......	......
Epididymitis	......	2	3	3	......	2	1	......	......
Hemorrhoids—									
External	......	3	2	1	......	......	......	......	......
Internal	......	1	5	2	......	......	......	......	......
Hernia—									
Inguinal	......	1	3	5	......	......	......	......	......
Oblique	......	1	1	......	......	1	......	......	......
Hydrocele	......	......	3	......	......	......	......	......	1
Hypertrophy of tonsils	......	......	2	2	......	......	......	......	......
Inflammation of rectum	......	......	1	......	......	......	......	......	......
Injury to testicle	......	1	2	2	......	......	......	......	......
Laryngitis	......	1	5	1	......	......	......	......	......
Loss of middle finger right hand	......	......	......	1	......	......	......	......	......
Loss of toes	......	......	2	......	......	......	......	......	......
Insufficient stature	......	......	3	2	......	......	......	......	......
Insufficient chest expansion	......	......	5	2	......	......	......	......	......
Old age	......	......	3	2	......	......	......	......	......
Œdema of legs	......	......	3	3	......	......	......	......	......
Opacity of cornea	......	2	3	3	......	......	......	......	......
Orchitis	......	1	3	4	......	......	......	......	......
Rheumatism	......	......	5	......	......	2	......	......	......
Roughened breathing	......	......	3	3	......	......	......	......	......
Scald of arm	......	1	1	......	......	......	......	......	......
Sprain of ankle	......	......	......	2	......	......	......	......	......
Sty	......	1	1	......	......	1	......	......	......
Syphilis—									
Primary	......	2	5	......	......	......	......	......	......
Secondary	......	8	3	......	......	......	......	......	......
Tubercle of lungs	......	3	10	3	......	......	......	......	......
Ulcer of penis	......	1	3	......	......	......	......	......	......
Ulcer of pharynx	......	......	3	......	......	......	......	......	......
Varicose veins of leg	......	3	5	1	......	......	......	......	......
Varicocele	......	2	8	3	......	......	......	......	......
Weak lungs	......	......	6	1	......	......	......	......	......
Weak pulse	......	......	1	......	......	......	......	......	......

TABLE IV.—STATEMENT, BY DISTRICTS, OF THE NUMBER OF PATIENTS TREATED DURING THE YEAR ENDED JUNE 30, 1901.

District.	Total cases.	Patients in hospital July 1, 1900.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Patients in hospital June 30, 1901.	Number of days relief in hospital.	Number of seamen furnished office relief.
Grand total	**58,381**	**770**	**12,571**	**13,341**	**12,132**	**421**	**788**	**346,844**	**45,040**
North Atlantic	5,380	80	1,062	1,142	1,037	33	72	36,117	4,238
Middle Atlantic	6,789	117	1,612	1,729	1,556	63	110	48,829	5,060
South Atlantic	8,882	122	1,807	1,929	1,756	61	112	51,322	6,953
The Gulf	6,597	77	1,418	1,495	1,387	43	65	34,066	5,102
The Ohio	5,339	38	1,107	1,145	1,069	25	51	23,812	4,194
The Mississippi	5,519	57	1,328	1,385	1,300	48	37	21,366	4,134
The Great Lakes	12,487	127	2,247	2,374	2,168	69	137	50,349	10,113
The Pacific	7,318	149	1,946	2,095	1,816	76	203	79,986	5,223
The quarantine stations	70	3	44	47	43	3	1	997	23

TABLE V.—RATIO OF PATIENTS TREATED IN HOSPITAL IN EACH DISTRICT.

District.	Per cent of patients treated in hospital.	District.	Per cent of patients treated in hospital.
North Atlantic	21.22	The Mississippi	25.09
Middle Atlantic	25.46	The Great Lakes	19.01
South Atlantic	21.71	The Pacific	28.62
The Gulf	22.66	The quarantine stations	67.14
The Ohio	21.44		

TABLE VI.—AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT.

District.	Average number of days' relief furnished to each patient.	District.	Average number of days' relief furnished to each patient.
North Atlantic	31.62	The Mississippi	15.42
Middle Atlantic	28.24	The Great Lakes	21.20
South Atlantic	26.60	The Pacific	38.17
The Gulf	22.78	The quarantine stations	21.21
The Ohio	20.88		

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Grand total of all cases	770	12,571	7,878	3,915	339	421	788	45,040	58,381
GENERAL DISEASES	315	5,518	3,496	1,640	175	192	330	19,239	25,072
LOCAL DISEASES	348	5,045	2,988	1,714	141	205	345	21,374	26,767
GENERAL INJURIES	3	146	105	34	......	6	4	251	400
LOCAL INJURIES	104	1,862	1,289	527	23	18	109	4,176	6,142
NORTH ATLANTIC.									
TOTAL CASES	80	1,062	646	362	29	33	72	4,238	5,380
General Diseases	33	501	298	184	11	14	30	1,716	2,253
Smallpox	......	1	1	......	......	......	......	......	1
Chicken pox	......	1	1	......	......	......	......	1	2
Measles	......	8	7	......	......	......	1	3	11
Scarlet fever	......	1	1	......	......	......	......	......	1
Influenza	......	34	27	6	......	......	1	131	165
Mumps	......	2	1	1	......	......	......	2	4
Simple continued fever	1	......	1	......	......	......	......	......	1
Enteric fever	2	54	44	3	......	2	7	8	64
Choleraic diarrhea	......	4	3	......	......	1	......	......	4
Dysentery	......	5	5	......	......	......	......	10	15
Beriberi	......	1	......	......	......	1	......	......	1
Malarial fever:									
Intermittent	3	58	54	7	......	......	......	84	145
Remittent	......	4	4	......	......	......	......	2	6
Erysipelas	1	2	3	......	......	......	......	2	5
Septicæmia	......	1	1	......	......	......	......	1	2
Tubercle	7	30	20	......	5	8	4	34	71
Syphilis:									
Primary	1	1	1	1	......	......	......	45	47
Secondary	4	89	......	91	......	1	1	358	451
Gonorrhea	6	96	60	34	......	......	8	610	712
Diseases dependent on animal parasites:									
Tænia solium	......	......	......	......	......	......	......	1	1
Acanthia lectularia	......	......	......	......	......	......	......	1	1
Phthirius inguinalis	......	......	......	......	......	......	......	7	7
Sarcoptes scabiei	......	1	1	......	......	......	......	2	3
Ascaris lumbricoides	......	......	......	......	......	......	......	1	1
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans	......	......	......	......	......	......	......	2	2
Microsporon furfur	......	......	......	......	......	......	......	5	5
Tinia barbæ	......	......	......	......	......	......	......	1	1
Effects of animal poisons, decayed and poisonous food	......	1	1	......	......	......	......	......	1
Effects of vegetable poisons:									
Copaiba	......	......	......	......	......	......	......	2	2
Rhus	......	1	1	......	......	......	......	1	2
Coal gas	......	......	......	......	......	......	......	1	1
Effects of the presence of foreign bodies	......	1	......	......	1	......	......	......	1
Effects of heat	......	3	3	......	......	......	......	......	3
Effects of cold	......	1	1	......	......	......	......	......	1
Alcoholism	......	13	12	......	1	......	......	11	24
Rheumatic fever	......	15	9	5	......	......	1	7	22
Rheumatism	8	55	29	27	2	......	5	275	338
Osteoarthritis	......	1	......	......	1	......	......	1	2
Cyst:									
Mucous	......	......	......	......	......	......	......	4	4
Sebaceous	......	......	......	......	......	......	......	5	5

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

NORTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
New growth, nonmalignant:									
Lipoma		2	2					6	8
Fibroma		2		1	1			1	3
Condyloma								5	5
Thickening tendons		1	1						1
Papilloma		1	1					16	17
Pterygium								1	1
Keloid		1		1				1	2
New growth, malignant:									
Sarcoma		1				1			1
Carcinoma		3	2				1	5	8
Epithelioma								1	1
Anæmia		1		1				3	4
Diabetes mellitus		1		1				11	12
Congenital malformations		2		1			1	1	3
Debility		5	1	4				47	52
Local Diseases	**34**	**406**	**234**	**143**	**16**	**18**	**29**	**2,027**	**2,467**
DISEASES OF THE NERVOUS SYSTEM	8	30	4	16	5	5	8	95	133
Of the nerves—									
Inflammation, neuritis		3	1	2				6	9
Of the spinal cord and membranes—Cord—									
Inflammation, local								1	1
Degeneration—									
Of lateral columns	1						1		1
Of posterior columns	2	4		2	2		2	1	7
Of the brain and its membranes—Membranes—									
Inflammation of dura mater		1				1			1
Hemorrhage	1						1		1
Of the brain and its membranes—Brain—									
Inflammation		2				2			2
Hyperæmia								1	1
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy	1	2		1		2			3
Paralysis—									
Hemiplegia	3	1					4		4
Local paralysis		1		1				5	6
Epilepsy		2		2				1	3
Vertigo								4	4
Headache								8	8
Hyperæsthesia		1		1					1
Anæsthesia								1	1
Neuralgia		7	2	4	1			37	44
Nervous weakness		1		1				30	31
Hiccough		1	1						1
Mental diseases—									
Mania		2		1	1				2
Dementia		2		1	1				2
DISEASES OF THE EYE	1	4	3	1	1			54	59
Conjunctivitis								15	15
Conjunctivitis, catarrhal								2	2
Acute								20	20
Ulceration of cornea								3	3
Opacity of cornea								1	1
Iritis		4	3	1				8	12
Lenticular cataract	1				1				1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

NORTH ATLANTIC—Continued.

District.	Number of cases.								
			Discharged.						
	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
DISEASES OF THE EYE—Continued.									
Ametropia								3	3
Abscess lachrymal sac								1	1
Ptosis								1	1
DISEASES OF THE EAR		9	1	6	2			19	28
Inflammation of the external meatus—chronic								1	1
Accumulation in external meatus of wax or epidermis								13	13
Inflammation of the middle ear—									
Nonsuppurative		4	1	2	1			4	8
Suppurative		4		4					4
Obstruction of Eustachian tube								1	1
Deafness		1			1				1
DISEASES OF THE NOSE		1		1				41	42
Inflammation of soft parts		1	1					41	42
Diseases of septum		1		1				4	5
Epistaxis								1	1
Inflammation of the accessory sinuses		1		1					1
Inflammation of the naso-pharynx								3	3
DISEASES OF THE CIRCULATORY SYSTEM	7	30	3	25	1	6	2	55	92
Valvular disease—									
Aortic		5		4	1			2	7
Mitral	4	17		17		3	1	13	34
Aortic and mitral	3	2		3		2		4	9
Dilatation of heart								1	1
Angina pectoris								1	1
Disordered action of the heart—irregularity								10	10
Aneurism of arteries		3		1		1	1		3
Phlebitis		1	1						1
Varix		2	2					24	26
DISEASES OF THE RESPIRATORY SYSTEM		59	34	19	1	4	1	324	383
Inflammation of mucous membrane of larynx—catarrhal, acute								11	11
Bronchitis—									
Catarrhal, acute		23	14	9				239	262
Catarrhal, chronic		3	2		1			40	43
Spasmodic asthma		3		3				7	10
Congestion of lung		1		1				1	2
Hemorrhage of lung—hæmoptysis								3	3
Pneumonia		13	8	1		4		2	15
Broncho-pneumonia		1		1					1
Abscess of lung		1		1					1
Chronic interstitial inflammation		1		1					1
Phthisis—tubercular		1					1	3	4
Pleurisy—									
Acute		11	10	1				17	28
Chronic		1		1				1	2
DISEASES OF THE DIGESTIVE SYSTEM	2	92	65	22	2		5	525	619
Inflammation of the lips		1	1						1
Ulceration of the lips								3	3
Fissure of the lips								1	1
Caries of dentine and cementum								6	6
Abscess of dental periosteum		1	1					7	8
Inflammation of gums and alveoli		1	1					2	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

NORTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Diseases of the Digestive System—Continued.									
Suppuration of alveoli								3	3
Toothache								7	7
Ulcer fauces								1	1
Ulceration of the tongue								1	1
Sore throat								7	7
Inflammation of the tonsils—									
Follicular		11	9	2				43	54
Suppuration		2	2					1	3
Hypertrophy of tonsils		1	1						1
Elongated uvula								1	1
Ulceration fauces								1	1
Inflammation of the pharynx—catarrhal								17	17
Inflammation of the stomach—catarrhal		9	7	1			1	10	19
Ulceration of the stomach, superficial		1	1						1
Hemorrhage of the stomach								1	1
Indigestion		5	3	2				178	183
Gastralgia								1	1
Inflammation of the intestines—									
Enteritis		13	11	2				1	14
Typhlitis		5	5					1	6
Catarrhal		5	2	2			1	12	17
Hernia		5	2	3				59	64
Inflammation hernial sac		1	1						1
Intestinal dyspepsia								7	7
Constipation		3	2	1				27	30
Colic								6	6
Diarrhea	1	2	1	2				69	72
Periproctitis—abscess		4	2	1	1				4
Fissure of the anus		1					1	2	3
Fistula in ano		6	4	1			1	6	12
Piles—									
Internal	1	4	4	1				10	15
External		2		1			1	17	19
Mixed		1			1				1
Pruritis ani								1	1
Inflammation of the liver, acute		2		2				1	3
Hyperæmia of the liver								5	5
Hypertrophy of the liver								1	1
Jaundice		1	1					3	4
Inflammation of hepatic ducts and gall bladder		3	3					1	4
Calculi		2	1	1				4	6
Biliary colic								1	1
Diseases of the Lymphatic System	1	32	18	12	1	1	1	39	72
Inflammation of lymph glands		18	9	9				36	54
Suppuration	1	14	9	3	1	1	1	3	18
Diseases of the Urinary System	1	23	7	15	1	1		92	116
Acute nephritis		2		2				3	5
Bright's disease		2		2				5	7
Chronic nephritis		1		1				1	2
Granular kidney		8		6	1	1		2	10
Calculus in kidney		2	2					2	4
Hæmaturia								2	2
Albuminuria								6	6
Inflammation of bladder—									
Acute		6	3	3				46	52
Subacute	1		1					4	5
Chronic								2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

NORTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE URINARY SYSTEM—Continued.									
Irritability of bladder								6	6
Retention of urine		2	1	1				4	6
Incontinence of urine								9	9
DISEASES OF THE GENERATIVE SYSTEM	6	56	44	14			4	296	358
Urethritis								4	4
Gleet								44	44
Stricture of urethra—organic		10	2	8				70	80
Inflammation of the prostate—acute								1	1
Paraphimosis		1		1				4	5
Inflammation of the penis—of the glans								8	8
Ulcer of penis		6	4	2				13	19
Œdema of penis								1	1
Soft chancre	3	25	24	1			3	95	123
Abscess of the scrotum		1	1						1
Pruritus of the scrotum								2	2
Inflammation of the spermatic cord								1	1
Varicocele								11	11
Hydrocele of tunica vaginalis	2	3	5					8	13
Inflammation of the testicle								2	2
Acute orchitis	1	7	5	2			1	21	29
Epididymitis		2	2					4	6
Spermatorrhea		1	1					5	6
Impotence								2	2
DISEASES OF THE ORGANS OF LOCOMOTION	3	24	16	8		1	2	116	143
Inflammation of the bones—									
Osteitis		2	1	1					2
Periostitis		3		1			2	6	9
Caries		1	1					1	2
Necrosis								3	3
Inflammation of joints—									
Acute synovitis	1	5	5	1				16	22
Chronic synovitis		1		1					1
Dislocation of shoulder								1	1
Caries of the spine	2			1		1			2
Psoas, lumbar, and other abscesses		1	1						1
Myalgia		9	7	2				51	60
Lumbago								18	18
Inflammation of sheaths of tendons								7	7
Thecal abscess								1	1
Ganglion								1	1
Inflammation of bursæ, acute								7	7
Bursal cyst		2	1	1				3	5
Flat-foot								1	1
DISEASES OF THE CONNECTIVE TISSUE	2	14	12	1	1		2	74	90
Inflammation	1	5	4				2	35	41
Abscess	1	9	8	1	1			38	48
Œdema								1	1
DISEASES OF THE SKIN	3	31	26	3	1		4	293	327
Erythema		1	1					1	2
Urticaria								6	6
Eczema		2	1	1				41	43
Prurigo								1	1
Psoriasis								7	7
Herpes		1	1					7	8
Zona		1	1					2	3
Pemphigus								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30. 1901—Continued.

NORTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE SKIN—Continued.									
Acne	------	------	------	------	------	----	------	6	6
Sycosis	------	------	------	------	------	----	------	5	5
Seborrhea	------	------	------	------	------	----	------	1	1
Ulcer	3	21	18	2	1	----	3	57	81
Boil	------	2	1	------	------	----	1	116	118
Carbuncle	------	------	------	------	------	----	------	11	11
Whitlow	------	1	1	------	------	----	------	20	21
Onychia	------	------	------	------	------	----	------	2	2
Corn	------	1	1	------	------	----	------	3	4
Wen	------	------	------	------	------	----	------	1	1
Pruritus	------	------	------	------	------	----	------	2	2
Lupus	------	1	1	------	------	----	------	3	4
Injuries	**13**	**152**	**114**	**35**	**2**	**1**	**13**	**495**	**640**
GENERAL INJURIES	------	5	4	1	------	----	------	15	20
Effects of heat—									
Burns and scalds	------	3	3	------	------	----	------	11	14
Heat stroke	------	1	1	------	------	----	------	2	3
Effects of chemical irritants and corrosives	------	------	------	------	------	----	------	2	2
Mutiple injury	------	1	------	1	------	----	------	--------	1
LOCAL INJURIES	13	147	110	34	2	1	13	480	640
Contusion of nerves	------	------	------	------	------	----	------	1	1
Rupture of vein	------	1	1	------	------	----	------	--------	1
Contusion of gland	------	------	------	------	------	----	------	1	1
Contusion of muscles	------	1	1	------	------	----	------	--------	1
Strain of muscles	------	1	1	------	------	----	------	16	17
Rupture of muscles	------	1	1	------	------	----	------	1	2
Strain of tendons	------	1	1	------	------	----	------	--------	1
Abrasion of skin	------	------	------	------	------	----	------	1	1
Burn or scald of skin	------	1	------	1	------	----	------	1	2
Frostbite	------	4	3	1	------	----	------	12	16
Wound of mucous membrane	------	------	------	------	------	----	------	1	1
Contusion of scalp	------	------	------	------	------	----	------	1	1
Wound of scalp	------	3	3	------	------	----	------	15	18
With injury to the aponeurosis	1	2	2	------	------	----	1	2	5
With injury to the pericranium	------	1	1	------	------	----	------	--------	1
Contusion of skull	------	1	------	1	------	----	------	1	2
Concussion of brain	------	2	1	1	------	----	------	--------	2
Contusion of brain	------	2	1	------	------	----	1	--------	2
Contusion of face	------	2	1	1	------	----	------	2	4
Wound of face and mouth	------	3	3	------	------	----	------	19	22
Fracture of facial bones	------	2	1	1	------	----	------	--------	2
Contusion of eyelid	------	------	------	------	------	----	------	3	3
Wound of eyelid	------	------	------	------	------	----	------	3	3
Contusion of eyeball	------	------	------	------	------	----	------	1	1
Foreign bodies in the conjunctiva or cornea	------	1	------	1	------	----	------	7	8
Wound of eyeball	------	1	------	------	1	----	------	--------	1
Wound of neck	------	1	------	1	------	----	------	--------	1
Contusion of chest	------	4	2	2	------	----	------	25	29
Fracture of ribs	1	3	3	1	------	----	------	5	9
Contusion of back	------	6	3	2	------	----	1	13	19
Sprain of back	------	9	6	2	------	----	1	5	14
Wound of back	------	------	------	------	------	----	------	1	1
Concussion of cord	------	1	------	1	------	----	------	--------	1
Compression of spinal cord	1	------	------	------	1	----	------	--------	1
Contusion of abdomen	------	------	------	------	------	----	------	2	2
Wound of parietes of abdomen	------	------	------	------	------	----	------	2	2
Contusion of the perineum, scrotum, or penis	------	2	2	------	------	----	------	--------	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

NORTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Wound of the male urethra, perineum, scrotum, testis, or penis		1				1			1
Wound of rectum								1	1
Fracture or dislocation of pelvic bones		1		1				3	4
Contusion of upper extremities		9	7	1			1	48	57
Sprain of shoulder								9	9
Sprain of elbow								2	2
Sprain of wrist		1	1					15	16
Sprain of hand								1	1
Sprain of thumb								1	1
Wound of upper extremities	2	14	15	1				153	169
Fracture of clavicle		3	2	1				3	6
Fracture of humerus	2	2	3	1					4
Fracture of bones of forearm—									
Radius		2	1	1				3	5
Ulna		2		2				2	4
Both bones		4	3	1				1	5
Fracture of carpus, metacarpus, or phalanges	2	4	4	2				6	12
Dislocation of clavicle								2	2
Dislocation of humerus		4	1	1			2	5	9
Dislocation of radius and ulna		1		1				1	2
Contusion of lower extremities		10	7	2			1	42	52
Sprain of knee		1	1					3	4
Sprain of ankle		6	6					9	15
Wound of lower extremities	1	7	7	1				21	29
Fracture of femur	1	3	4						4
Fracture of patella		1					1		1
Fracture of tibia	1	3	3				1		4
Fracture of fibula	1	3	2	1			1		4
Fracture of tibia and fibula		7	4	1			2		7
Fracture of bones of foot—									
Of the tarsus								2	2
Of the phalanges of the toes		1	1					4	5
Dislocation of foot		1	1					2	3

MIDDLE ATLANTIC.

TOTAL CASES	117	1,612	994	471	91	63	110	5,060	6,789
General Diseases	52	643	421	130	67	29	48	2,031	2,726
Smallpox								2	2
Cowpox								37	37
Measles								1	1
Influenza		37	32	5				148	185
Mumps		1	1						1
Enteric fever	6	21	24	1		2		4	31
Choleraic diarrhea								4	4
Dysentery		7	5	2				11	18
Beriberi		7	4	2			1	1	8
Malarial fever:									
Intermittent	3	131	123	9		1	1	192	326
Remittent	1	12	11	2				13	26
Erysipelas		2	2						2
Tubercle	10	85	47		6	22	20	44	139
Syphilis:									
Primary		7		6			1	19	26
Secondary	6	88	7	79	2	1	5	579	673

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MIDDLE ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Gonorrhea	14	110	59		54		11	562	686
Diseases dependent on animal parasites:									
Tænia solium		2	2					12	14
Tænia mediocanellata								1	1
Ascaris lumbricoides								2	2
Pediculis vestimenti								4	4
Phthirius inguinalis								1	1
Sarcoptes scabiei								11	11
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans								13	13
Microsporon furfur		1		1					1
Effects of poisonous gas		1	1						1
Effects of vegetable poisons:									
Tobacco								2	2
Rhus								1	1
Effects of inorganic poisons—potassium								1	1
Effects of the presence of foreign bodies								3	3
Effects of mechanical injuries		1		1				3	4
Effects of excessive exertions and strain								1	1
Alcoholism	1	38	31	5	3			30	69
Rheumatic fever	4	37	30	9		1	1	14	55
Rheumatism	5	35	31	2			7	255	295
Osteoarthritis								1	1
Cyst—									
Mucous								6	6
Sebaceous		2	2					1	3
New growth, nonmalignant:									
Fibroma		1	1					4	5
Papilloma		4	2	1			1	12	16
Echinococcus		1	1						1
New growth, malignant:									
Sarcoma		3	1	1		1			3
Epithelioma		1	1					1	2
Carcinoma		2		1	1				2
Squamous carcinoma								1	1
Rodent ulcer								1	1
Anæmia		4	2	2				9	13
Diabetes mellitus	1					1			1
Diabetes insipidus								3	3
Congenital malformations		1	1						1
Debility	1	1		1	1			21	23
Local Diseases	**52**	**731**	**409**	**268**	**19**	**34**	**53**	**2,470**	**3,253**
DISEASES OF THE NERVOUS SYSTEM	7	53	20	21	5	7	7	131	191
Of the nerves:									
Inflammation—									
Neuritis		9	6	3				17	26
Multiple neuritis		1					1		1
Of the spinal cord and membranes—									
Cord—									
Inflammation, local		2		2					2
Degeneration—									
Of lateral columns		2			2				2
Of posterior columns		4			1	1	2	6	10
Of the brain and its membranes—									
Membranes—									
Inflammation of dura matter		1				1			1
Hemorrhage		1				1			1
Of the brain and its membranes—									
Brain—									
Inflammation		1				1			1
Hemorrhage	1	3		3		1			4
Hyperæmia								2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MIDDLE ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE NERVOUS SYSTEM—Continued.									
Functional nervous disorders with other diseases of undetermined nature—									
Paralysis		1					1	3	4
Paraplegia	2					1	1		2
Hemiplegia	1						1		1
Local paralysis	1	1		2					2
Incomplete paralysis								2	2
Paralysis agitans								1	1
Spasm								1	1
Torticollis								1	1
Epilepsy		2	1			1		1	3
Vertigo	1	3	1	3				2	6
Headache		3	2	1				22	25
Anæsthesia								1	1
Neuralgia	1	12	7	5			1	43	56
Nervous weakness		2		2				29	31
Mental diseases—									
Mania, acute		4	3		1				4
Melancholia		1			1				1
DISEASES OF THE EYE	2	17	8	11				49	68
Conjunctivitis		5	4	1				28	33
Conjunctivitis, catarrhal—acute	1		1					2	3
Keratitis								4	4
Ulceration of cornea		1		1					1
Iritis	1	5	1	5				3	9
Glaucoma		1	1						1
Chronic hyperæmia of conjunctiva								1	1
Retinitis		1		1					1
Lenticular cataract								2	2
Capsular cataract								3	3
Hemorrhage of retina		1		1					1
Amblyopia		1		1				2	3
Temporary blindness		1		1					1
Ametropia								1	1
Abscess of lachrymal sac		1	1						1
Blepharitis marginalis								1	1
Sty								1	1
Œdema of eyelid								1	1
DISEASES OF THE EAR		5		4			1	21	26
Inflammation of the external meatus—									
Acute		1					1	3	4
Abscess								1	1
Accumulation in external meatus of wax or epidermis								9	9
Inflammation of the middle ear—									
Nonsuppurative		1		1				7	8
Suppurative		3		3					3
Perforation of membrana tympani								1	1
DISEASES OF THE NOSE								31	31
Inflammation of soft parts								31	31
Diseases of septum		3		3				2	5
Epistaxis		1		1				2	3
Inflammation of the accessory sinuses		2		2					2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MIDDLE ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE CIRCULATORY SYSTEM	2	46	7	27	3	5	6	59	107
Valvular disease—									
Aortic		6		3	1	1	1	6	12
Mitral		13		9		2	2	18	31
Aortic and mitral	1	11		10		1	1	15	27
Hypertrophy of heart								2	2
Dilatation of heart								2	2
Angina pectoris		1			1				1
Disordered action of the heart—									
Abnormal rapidity								3	3
Irregularity								7	7
Arteritis—									
Degeneration of arteries								1	1
Arterio-capilliàry fibrosis		1		1					1
Aneurism of arteries		2		1			1		2
Obstruction of arteries, embolism		2				1	1		2
Phlebitis		1	1						1
Varix	1	9	6	3	1			5	15
DISEASES OF THE RESPIRATORY SYSTEM	4	91	51	23	5	9	7	413	508
Hay fever								1	1
Inflammation of mucous membrane of larynx—									
Catarrhal, acute								7	7
Membranous								1	1
Tracheitis								1	1
Bronchitis—									
Catarrhal, acute	2	30	19	8	2		3	351	383
Catarrhal, chronic		13	3	6	2	1	1	26	39
Spasmodic asthma	1	1		2					2
Congestion of lung								2	2
Hemorrhage of lung								1	1
Hæmoptysis								1	1
Pneumonia	1	21	14	1		6	1	2	24
Broncho-pneumonia		2			1	1		1	3
Chronic interstitial inflammation		1					1	1	2
Phthisis—									
Tubercular		1				1			1
Colliers phthisis								1	1
Emphysema		1		1					1
Pleurisy—									
Acute		18	14	3			1	13	31
Chronic								1	1
Empyema		1	1						1
Hydrothorax								1	1
Adhesions of pleura		2		2				2	4
DISEASES OF THE DIGESTIVE SYSTEM	4	147	91	38	2	9	11	670	821
Inflammation of the lips								2	2
Inflammation of the mouth								2	2
Ulceration of the mouth		2	2					7	9
Caries of the dentine and cementum								5	5
Inflammation of the dental periosteum								1	1
Abscess of dental periosteum		1	1					7	8
Ulceration of gums and alveoli								1	1
Caries of the alveoli								1	1
Toothache								6	6
Ulceration of the tongue								4	4
Sore throat		1	1					6	7
Ulceration of palate and fauces								4	4

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MIDDLE ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Inflammation of the tonsils—									
Follicular		13	9	3			1	31	44
Suppuration		4	4					5	9
Elongated uvula								1	1
Inflammation of salivary glands								3	3
Inflammation of the pharynx—									
Catarrhal		6	2	4				38	44
Follicular		2	1	1				2	4
Ulcer of pharynx								1	1
Inflammation of the stomach—									
Catarrhal	1	21	7	13		1	1	47	69
Membranous or pellicular								1	1
Ulceration of the stomach—superficial								1	1
Hemorrhage of the stomach		1		1					1
Indigestion		5	2	2			1	122	127
Eructation								2	2
Pyrosis								1	1
Vomiting		1	1						1
Gastralgia								2	2
Loss of appetite								6	6
Inflammation of the intestines—									
Enteritis		6	6					21	27
Typhlitis		6	3			2	1		6
Colitis		5	3			1	1	7	12
Catarrhal	1	5	4	2				9	15
Ulceration of intestines		1				1			1
Hemorrhage of intestines								1	1
Hernia	1	20	13	2	1	1	4	131	152
Intestinal dyspepsia								9	9
Constipation		1	1					63	64
Colic		1	1					2	3
Diarrhea		10	8	1		1		58	68
Enteralgia								2	2
Inflammation of the rectum								1	1
Periproctitis		1	1						1
Abscess		2	1	1				1	3
Fissure of the anus								2	2
Fistula in ano		6	2	3			1	3	9
Piles—									
Internal		5	4				1	15	20
External		5	5					12	17
Mixed		2	2					2	4
Inflammation of the liver—									
Acute		3		3				1	4
Chronic		3		1	1	1			3
Hyperæmia of the liver								7	7
Jaundice		1	1					8	9
Inflammation of hepatic ducts and gall bladder	1	3	2	1		1		6	10
Calculi		1	1						1
Biliary colic		3	3						3
DISEASES OF THE LYMPHATIC SYSTEM	7	64	49	18			4	71	142
Hypertrophy of spleen		1		1					1
Inflammation of lymph glands		48	38	6			4	71	119
Suppuration	7	15	11	11					22
DISEASES OF THE URINARY SYSTEM	2	28	5	20		3	2	56	86
Acute nephritis		1		1				1	2
Bright's disease		7		6		1		1	8
Chronic nephritis	2	10		8		2	2		12
Granular kidney								3	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MIDDLE ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE URINARY SYSTEM—Continued.									
Congestion of kidney								1	1
Hæmaturia		1	1					2	3
Lithuria								1	1
Phosphaturia								2	2
Nephralgia								1	1
Inflammation of bladder—									
Acute		9	4	5				33	42
Chronic								3	3
Irritability of bladder								2	2
Retention of urine								4	4
Incontinence of urine								2	2
DISEASES OF THE GENERATIVE SYSTEM	12	125	82	47	3		5	477	614
Urethritis		2	1	1				9	11
Gleet		1	1					33	34
Abscess of the urethra		1			1				1
Stricture of urethra—									
Organic	2	19	8	13				46	67
Spasmodic								1	1
Urethral fever		1	1						1
Urethral fistula		4	4						4
Prostatorrhea								9	9
Hypertrophy of the prostate	1			1				1	2
Posthitis								11	11
Phimosis	2	2	4					6	10
Paraphimosis								2	2
Inflammation of the glans								4	4
Abscess of penis								1	1
Ulcer of penis	1	9	2	5			3	33	43
Œdema of penis		2	2						2
Soft chancre	4	60	42	20			2	239	303
Inflammation of the scrotum		1			1			2	3
Abscess of the scrotum		2	2					2	4
Œdema of scrotum								1	1
Pruritus of the scrotum								2	2
Hæmatocele of the spermatic cord								1	1
Varicocele		3	2		1			9	12
Hydrocele of tunica vaginalis	2	5	5	2				7	14
Inflammation of the testicle—									
Acute orchitis		9	6	3				29	38
Chronic orchitis								2	2
Epididymitis		4	2	2				21	25
Spermatorrhea								4	4
Impotence								2	2
DISEASES OF THE ORGANS OF LOCOMOTION	4	43	25	20			2	174	221
Inflammation of the bones—									
Osteitis		1	1						1
Periostitis								4	4
Abscess								2	2
Necrosis		4	2	1			1	1	5
Inflammation of joints—									
Acute synovitis	1	7	4	4				11	19
Chronic synovitis		1		1					1
Suppuration		1		1					1
Ankylosis		1	1					4	5
Loose body in joint								2	2
Caries of the spine	1						1		1
Posterior curvature of spine	1			1					1
Posterior curvature of spine, angular		1		1					1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MIDDLE ATLANTIC—Continued.

District.	Number of cases.								
			Discharged.						
	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Myalgia	1	22	16	7				96	119
Lumbago		1		1				37	38
Inflammation of tendons		1		1				1	2
Contraction of tendons								1	1
Ganglion		1	1					2	3
Inflammation of bursæ—									
Acute		1		1				6	7
Chronic								1	1
Abscess of bursæ								1	1
Bunion		1		1				1	2
Bursal cyst								2	2
Flat foot								2	2
DISEASES OF THE CONNECTIVE TISSUE	5	51	37	15	1	1	2	77	133
Inflammation		12	8	3			1	48	60
Abscess	3	37	28	10	1		1	28	68
Gangrene	1		1						1
Œdema	1	2		2		1		1	4
DISEASES OF THE SKIN	3	58	34	21			6	239	300
Erythema		1		1				3	4
Emphysema		1		1					1
Urticaria								4	4
Prickly heat								4	4
Eczema		3	1	2				34	37
Impetigo								7	7
Pityriasis rubra								3	3
Prurigo								3	3
Psoriasis		1		1				5	6
Herpes		1	1					2	3
Zona		1	1					3	4
Pemphigus		1	1						1
Dermatitis herpetiformis		1	1					4	5
Acne								6	6
Gutta rosea								2	2
Sycosis								2	2
Ulcer	1	36	19	13			5	63	100
Boil	1	3	3	1				50	54
Carbuncle		3	2				1	18	21
Whitlow	1	4	5					11	16
Onychia								7	7
Corn		2		2				3	5
Wen								1	1
Pruritus								3	3
Lupus								1	1
Injuries	**13**	**238**	**164**	**73**	**5**	**0**	**9**	**559**	**810**
GENERAL INJURIES		17	10	6			1	37	54
Effects of heat—Burns and scalds		12	7	5				37	49
Multiple injury		4	2	1			1		4
Suffocation		1	1						1
LOCAL INJURIES	13	221	154	67	5		8	522	756
Contusion of nerves		1		1					1
Compression of nerves		1	1					1	2
Strain of muscles		3	1	2				5	8
Wound of tendons								1	1
Abrasion of skin	1	6	6	1				4	11
Wound of skin		1	1					1	2
Burn or scald of skin		1	1					3	4
Frostbite		4	3	1				8	12
Wound of scalp								22	22
With injury to the aponeurosis		7	4	2			1		7

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MIDDLE ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Fracture of the base of skull		1		1					1
Concussion of brain		2	2					2	4
Contusion of face		4	3				1	6	10
Wound of face and mouth		3	3					13	16
Fracture of facial bones	1	3	1	3				2	6
Injury of alveoli and teeth								1	1
Dislocation of lower jaw								1	1
Contusion of eyelid								3	3
Wound of eyelid		1	1					1	2
Wound of conjunctiva								2	2
Foreign bodies in the conjunctiva or cornea								7	7
Foreign bodies in the eyeball								1	1
Wound of eyeball		1			1				1
Wound of pinna		2	2					3	5
Contusion of neck		1		1				2	3
Wound of neck		2	1	1				1	3
Contusion of chest		12	7	4			1	21	33
Fracture of ribs		3	2	1					3
Contusion of back		12	8	4				10	22
Sprain of back		3	3					14	17
Contusion of abdomen		2	1	1					2
Wound of parietes of abdomen		1		1				2	3
Contusion of the perineum, scrotum, or penis								2	2
Wound of the male urethra, perineum, scrotum, testis, or penis		1		1				2	3
Wound of bladder		1		1					1
Contusion of testicle								2	2
Contusion of upper extremities		13	6	6	1			54	67
Sprain of shoulder								3	3
Sprain of elbow		2	1		1			5	7
Sprain of wrist		1		1				14	15
Sprain of hand		1	1						1
Sprain of thumb								2	2
Wound of upper extremities	1	32	25	7			1	164	197
Fracture of clavicle	1	2	3						3
Fracture of scapula		1	1						1
Fracture of humerus		5	4	1					5
Fracture of bones of forearm—									
Radius	1	1	2						2
Ulna								1	1
Both bones	1						1		1
Fracture of carpus, metacarpus, or phalanges	1	4	4	1				6	11
Dislocation of clavicle								3	3
Dislocation of humerus		3	2	1				2	5
Dislocation of phalanges of carpus		1		1					1
Dislocation of phalanges of fingers								3	3
Contusion of lower extremities	1	14	10	4	1			40	55
Sprain of hip		2	2					1	3
Sprain of knee		7	4	3				7	14
Sprain of ankle		11	7	4				10	21
Wound of lower extremities	2	25	18	8			1	62	89
Fracture of femur	1	1	2						2
Fracture of patella	1						1		1
Fracture of fibula		6	5	1				2	8
Fracture of tibia and fibula	1	4	2	2	1				5
Fracture of bones of foot—									
Of the tarsus		2	1	1					2
Of the metatarsus		2	1				1		2
Of the phalanges of the toes		1	1						1
Dislocation of metatarsus and phalanges		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

SOUTH ATLANTIC.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
TOTAL CASES	122	1,807	1,199	522	35	61	112	6,953	8,882
General Diseases	32	924	634	257	16	25	21	2,963	3,919
Smallpox		8	5	2		1		1	9
Cowpox								10	10
Chicken pox								2	2
Measles		16	15			1		3	19
Influenza		94	80	14				295	389
Mumps		12	12					4	16
Diphtheria		6	4		1	1			6
Enteric fever	1	31	23	4		4	1	1	33
Choleraic diarrhea		1	1					1	2
Dysentery		29	25	4				63	92
Malarial fever:									
Intermittent	10	269	257	15	2		5	791	1,070
Remittent	1	89	83	6		1		47	137
Erysipelas		8	4	4				3	11
Tetanus		1				1			1
Tubercle	7	51		32	7	14	5	51	109
Syphilis:									
Primary		15	2	11	1		1	54	69
Secondary	5	87	4	81	3	1	3	358	450
Inherited		5		5					5
Gonorrhea	4	80	43	39			2	693	777
Diseases dependent on animal parasites:									
Tænia solium		1			1			1	2
Tænia mediocanellata								1	1
Oxyuris vermicularis								1	1
Phthirius inguinalis								52	52
Bothriocephalus latus		1	1						1
Pulex penetrans								1	1
Sarcoptes scabiei		1	1					8	9
Diseases dependent on vegetable parasites:									
Tænia circinata		1		1				1	2
Tænia tonsurans								1	1
Tænia favosa								1	1
Effects of vegetable poisons:									
Tobacco		1			1			1	2
Rhus								3	3
Ol. tiglii								1	1
Effects of inorganic poisons—Mercury		1	1						1
Effects of the presence of foreign bodies		1	1					1	2
Effects of mechanical injuries		1		1				2	3
Effects of heat		2	2						2
Alcoholism	1	6	5	2				13	20
Rheumatic fever	2	25	17	8			2	19	46
Rheumatism		69	40	24			5	335	404
Gout								1	1
Cyst		1	1						1
Mucous								2	2
Sebaceous		1	1					2	3
New growth, nonmalignant:									
Lipoma		1	1					2	3
Chondroma		1	1						1
Myoma								1	1
Papilloma								23	23
Pterigium		1	1					1	2
New growth, malignant:									
Sarcoma		1		1				1	2
Carcinoma								2	2
Squamous carcinoma		1		1				1	2
Epithelioma		1	1					2	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

SOUTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Anæmia	-----	2	1	1	-----	-----	-----	7	9
Purpura	-----	-----	-----	-----	-----	-----	-----	1	1
Diabetes mellitus	-----	1	-----	-----	-----	1	-----	3	4
Debility	1	1	1	1	-----	-----	-----	95	97
Local Diseases	**79**	**664**	**411**	**214**	**16**	**32**	**70**	**3,467**	**4,210**
DISEASES OF THE NERVOUS SYSTEM	38	50	19	19	2	9	39	166	254
Of the nerves—									
Inflammation—Neuritis	1	7	5	2	-----	1	-----	12	20
Of the spinal cord and membranes—Cord—									
Degeneration of posterior columns	-----	-----	-----	-----	-----	-----	-----	1	1
Of the brain and its membranes—Membranes—									
Inflammation of pia mater and arachnoid	-----	2	1	-----	-----	1	-----	-----	2
Hemorrhage	-----	1	-----	-----	-----	1	-----	1	2
Of the brain and its membranes—Brain—									
Sclerosis	2	2	-----	-----	1	-----	3	-----	4
Hemorrhage	1	1	-----	-----	-----	1	1	-----	2
Hyperæmia	-----	-----	-----	-----	-----	-----	-----	1	1
Functional nervous disorders with other diseases of undetermined nature—									
Paralysis—									
Paraplegia	1	1	-----	-----	-----	1	1	-----	2
Hemiplegia	5	6	-----	4	1	2	4	2	13
Local paralysis	1	2	1	2	-----	-----	-----	5	8
Paralysis agitans	-----	1	-----	1	-----	-----	-----	-----	1
Spasm	-----	-----	-----	-----	-----	-----	-----	2	2
Torticollis	-----	-----	-----	-----	-----	-----	-----	1	1
Occupation neurosis	-----	-----	-----	-----	-----	-----	-----	1	1
Epilepsy	-----	2	1	1	-----	-----	-----	3	5
Vertigo	-----	1	1	-----	-----	-----	-----	4	5
Headache	-----	1	-----	1	-----	-----	-----	24	25
Anæsthesia	-----	-----	-----	-----	-----	-----	-----	2	2
Neuralgia	-----	14	9	5	-----	-----	-----	94	108
Hysteria	-----	-----	-----	-----	-----	-----	-----	1	1
Nervous weakness	-----	2	-----	2	-----	-----	-----	12	14
Mental diseases—									
Mania—									
Acute	4	2	1	1	-----	-----	4	-----	6
Chronic	7	-----	-----	-----	-----	-----	7	-----	7
Melancholia—									
Acute	2	2	-----	-----	-----	-----	4	-----	4
Chronic	8	1	-----	-----	-----	-----	9	-----	9
Dementia—									
Acute	-----	1	-----	-----	-----	-----	1	-----	1
Chronic	3	-----	-----	-----	-----	1	2	-----	3
Epileptic	1	-----	-----	-----	-----	-----	1	-----	1
General paralysis of the insane	2	1	-----	-----	-----	1	2	-----	3
DISEASES OF THE EYE	1	14	6	7	-----	-----	2	84	99
Conjunctivitis	-----	5	2	3	-----	-----	-----	57	62
Acute	-----	-----	-----	-----	-----	-----	-----	1	1
Keratitis	-----	1	1	-----	-----	-----	-----	3	4
Ulceration of cornea	-----	1	1	-----	-----	-----	-----	2	3
Degeneration of cornea	-----	-----	-----	-----	-----	-----	-----	1	1
Opacity of cornea	-----	-----	-----	-----	-----	-----	-----	1	1
Glaucoma	-----	1	-----	-----	-----	-----	1	-----	1
Iritis	-----	6	2	4	-----	-----	-----	3	9

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

SOUTH ATLANTIC—Continued.

District.	Number of cases.								
			Discharged.						
	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
DISEASES OF THE EYE—Continued.									
Lenticular cataract	1						1	1	2
Amblyopia—Functional night blindness								1	1
Obstruction of nasal duct								1	1
Ep phora								1	1
Blepharitis marginalis								5	5
Sty								5	5
Abscess of eyelid								1	1
Œdema of eyelid								1	1
DISEASES OF THE EAR		12	7	5				53	65
Inflammation of the external meatus—									
Acute		2	2					7	9
Abscess								1	1
Accumulation in external meatus of wax or epidermis		2	2					12	14
Inflammation of the middle ear—									
Nonsuppurative		5	3	2				25	30
Suppurative		2		2				4	6
Within the mastoid cells		1		1					1
Perforation of membrana tympani								2	2
Tinnitus								2	2
DISEASES OF THE NOSE		3	1		2			45	48
Inflammation of soft parts								45	45
Inflammation of framework		3	1		2				3
Diseases of septum		1	1					2	3
Epistaxis		1	1					1	2
Inflammation of the accessory sinuses								1	1
DISEASES OF THE CIRCULATORY SYSTEM	3	19		18		3	1	47	69
Endocarditis								1	1
Valvular disease—									
Aortic		9		7		2		1	10
Mitral	2	4		5		1		12	18
Aortic and mitral		3		2			1	2	5
Hypertrophy of heart								2	2
Dilatation of heart		1		1				1	2
Disordered action of the heart—									
Abnormal rapidity								8	8
Irregularity		1		1				6	7
Aneurism of arteries								8	8
Obstruction of arteries—Thrombosis	1			1				1	2
Varix		1		1				4	5
Obstruction of veins								1	1
DISEASES OF THE RESPIRATORY SYSTEM	4	115	76	26	3	13	1	572	691
Inflammation of mucous membrane of larynx—Catarrhal, acute		1		1				2	3
Bronchitis—									
Catarrhal, acute		43	35	8				508	551
Catarrhal, chronic	3	5		3	2	3		21	29
Spasmodic asthma		5	2	2		1		11	16
Congestion of lung								1	1
Hemorrhage of lung								3	3
Pneumonia		38	26	3		8	1	2	40
Broncho-pneumonia		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

SOUTH ATLANTIC—Continued.

District.	Number of cases.								
			Discharged.						
	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Phthisis—									
Chronic		1		1					1
Tubercular	1	3		3	1			5	9
Emphysema vesicular		2	1	1					2
Pleurisy—									
Acute		14	11	2		1		17	31
Chronic		1		1				2	3
Empyema		1		1					1
DISEASES OF THE DIGESTIVE SYSTEM	8	140	100	40	2		6	1,080	1,228
Inflammation of the mouth								13	13
Ulceration of the mouth								4	4
Caries of dentine and cementum								44	44
Inflammation of the dental periosteum		1		1					1
Abscess of dental periosteum		1	1					2	3
Inflammation of gums and alveoli								2	2
Suppuration of alveoli		1	1					1	2
Ulceration of gums and alveoli								3	3
Toothache								24	24
Inflammation of the tongue								1	1
Sore throat		2	2					61	63
Ulceration of throat		1		1					1
Inflammation of the tonsils—									
Follicular		10	9	1				40	50
Suppuration		5	5					2	7
Inflammation of salivary glands		1	1					3	4
Inflammation of the pharynx—									
Catarrhal	1	4	4	1				82	87
Follicular		1	1						1
Inflammation of the stomach—catarrhal		25	17	7			1	62	87
Ulceration of the stomach—superficial		1		1					1
Indigestion		5	2	3				227	232
Pyrosis								2	2
Gastralgia								2	2
Loss of appetite								9	9
Inflammation of the intestines—									
Enteritis		13	10	1			2	14	27
Typhlitis	1	7	6	2				4	12
Colitis		2		2				9	11
Catarrhal		5	3	1			1	9	14
Hernia	1	7	2	4	1		1	92	100
Inflammation of hernial sac		1			1				1
Intussusception								1	1
Obstruction of the intestines		1	1						1
Intestinal dyspepsia								2	2
Constipation		4	4					132	136
Colic	1		1					21	22
Diarrhea	1	11	9	3				126	138
Enteralgia	1	1	2					2	4
Periproctitis		1	1					1	2
Abscess	1	3	2	2				4	8
Fistula in ano		7	5	1			1	9	16
Prolapse of the rectum		2	2						2
Prolapse of the anus		1		1					1
Piles—									
Internal		1	1					19	20
External		3	3					24	27
Mixed		1		1				7	8
Pruritus ani								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

SOUTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Inflammation of the liver—									
Acute		4	1	3				3	7
Chronic								1	1
Hyperæmia of the liver		2	2					10	12
Jaundice								2	2
Inflammation of hepatic ducts and gall bladder	1	3	1	3				3	7
Calculi		1		1					1
Biliary colic		1	1						1
DISEASES OF THE LYMPHATIC SYSTEM	3	44	31	14			2	144	191
Inflammation of lymph glands	1	25	15	9			2	114	140
Suppuration	2	18	16	4				23	43
Hypertrophy of lymph glands								5	5
Inflammation of lymphatics		1		1				2	3
DISEASES OF THE URINARY SYSTEM	1	32	5	16	1	5	6	88	121
Acute nephritis		2	1	1				4	6
Bright's disease		11		8		2	1	2	13
Chronic nephritis		10		4		2	4	4	14
Congestion of kidney								2	2
Calculus in ureter								2	2
Hæmaturia								6	6
Lithuria								3	3
Nephralgia								4	4
Inflammation of bladder—									
Acute	1	8	4	3	1	1		46	55
Chronic		1					1	2	3
Calculus of bladder								1	1
Irritability of bladder								8	8
Incontinence of urine								4	4
DISEASES OF THE GENERATIVE SYSTEM	16	122	91	36	2	1	8	480	618
Urethritis		1		1				20	21
Gleet								21	21
Hemorrhage of the urethra								1	1
Stricture of urethra—organic	4	30	21	10			3	59	93
Urethral fistula	1		1						1
Inflammation of the prostate—									
Acute								1	1
Chronic								1	1
Hypertrophy of the prostate								1	1
Posthitis								1	1
Phimosis		3	2		1			1	4
Inflammation of the penis								1	1
Of the glans		4	3	1				21	25
Ulcer of penis	4	10	4	10				53	67
Œdema of penis		2		2				3	5
Soft chancre	7	53	48	8			4	210	270
Inflammation of the scrotum								1	1
Abscess of the scrotum								1	1
Pruritus of the scrotum								3	3
Varicocele								22	22
Hydrocele of tunica vaginalis		3	1	1	1			12	15
Acute orchitis		14	10	3			1	31	45
Epididymitis		2	1			1		6	8
Spermatorrhea								3	3
Impotence								5	5
Displacements and distortions of the uterus								1	1
Metrorrhagia								1	1

Table VII.—Tabular Statement, by Districts, of Diseases and Injuries Treated during the Year ended June 30, 1901—Continued.

SOUTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE ORGANS OF LOCOMOTION	4	29	19	10	2		2	279	312
Inflammation of the bones—Periostitis		2	1	1				1	3
Caries								6	6
Necrosis	1	2	1	2				1	4
Inflammation of joints—									
Acute synovitis		2	1				1	5	7
Chronic synovitis								1	1
Anchylosis	1	2	1		2			1	4
Dislocation of articular cartilage		1	1						1
Psoas, lumbar, and other abscesses		1					1		1
Inflammation of muscles								6	6
Suppuration of muscles	1		1						1
Myalgia	1	16	11	6				237	254
Lumbago								3	3
Inflammation of tendons								6	6
Inflammation of sheaths of tendons		1		1					1
Inflammation of bursæ		1	1						1
Acute								6	6
Abscess of bursæ								2	2
Bunion								1	1
Bursal cyst		1	1					1	2
Bursal tumor								1	1
Club foot								1	1
DISEASES OF THE CONNECTIVE TISSUE		28	20	6	1	1		95	123
Inflammation		12	10	2				39	51
Abscess		13	9	4				54	67
Gangrene		1				1			1
Œdema		2	1		1			2	4
DISEASES OF THE SKIN	1	55	35	17	1		3	332	388
Erythema								4	4
Roseola								1	1
Urticaria		1	1					8	9
Prickly heat		1	1					2	3
Eczema		4	4					61	65
Impetigo								5	5
Pityriasis rubra		1	1						1
Prurigo								2	2
Psoriasis		1		1				2	3
Herpes		1	1					13	14
Zona								2	2
Dermatitis herpetiformis		1		1				2	3
Acne								8	8
Sycosis								1	1
Seborrhea								2	2
Tylosis								1	1
Chilblain								3	3
Ulcer	1	12	7	5			1	74	87
Boil		6	5	1				98	104
Carbuncle		10	6	3	1			10	20
Whitlow		15	9	4			2	13	28
Onychia		1		1				6	7
Corn								1	1
Cheloid								1	1
Wen								9	9
Hyperidrosis								1	1
Pruritus								1	1
Lupus		1		1				1	2
Injuries	**11**	**219**	**154**	**51**	**3**	**4**	**18**	**523**	**753**

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

SOUTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
GENERAL INJURIES	1	15	11	1		3	1	23	39
Effects of heat—									
Burns and scalds		8	6	1			1	23	31
Heat stroke		2	2						2
Sunstroke		2				2			2
Effects of cold		1	1						1
Multiple injury	1	2	2			1			3
LOCAL INJURIES	10	204	143	50	3	1	17	500	714
Contusion of nerves								1	1
Contusion of muscles								2	2
Strain of muscles		2	1	1				16	18
Strain of tendons								2	2
Abrasion of skin								3	3
Wound of skin								1	1
Frostbite	1	9	8	1			1	14	24
Effects on the skin of irritants or corrosives								1	1
Effects on the mucous membrane of irritants or corrosives								1	1
Contusion of scalp								3	3
Wound of scalp		7	5	1			1	27	34
With injury to the aponeurosis								2	2
With injury to the pericranium		1		1					1
Wound of skull		1					1		1
Concussion of brain		6	5			1			6
Penetrating wound of brain		1		1					1
Contusion of face								8	8
Wound of face and mouth		4	4					12	16
Fracture of facial bones	1		1					1	2
Contusion of eyelid								2	2
Wound of conjunctiva								2	2
Foreign bodies in the conjunctiva or cornea								12	12
Wound of eyeball		2	1	1				1	3
Contusion of pinna								2	2
Contusion of neck								1	1
Wound of neck		1	1						1
Contusion of chest								15	15
Dislocation of costal cartilages		2	1	1				1	3
Fracture of ribs		5	4	1				3	8
Contusion of back		7	6	1				17	24
Sprain of back		4	2	2				31	35
Contusion of abdomen		2	2					1	3
Wound of the male urethra, perineum, scrotum, testis, or penis		1					1	1	2
Contusion of testicle								4	4
Contusion of upper extremities		3	1	2				44	47
Sprain of shoulder		2		1			1	5	7
Sprain of elbow								3	3
Sprain of wrist		5	3	1			1	11	16
Sprain of thumb								4	4
Sprain of fingers								1	1
Wound of upper extremities	1	45	34	10			2	143	189
Fracture of clavicle	1	1	2					1	3
Fracture of scapula		2	1	1					2
Fracture of humerus		5	1	3	1				5
Fracture of bones of forearm—									
Radius		2	2					1	3
Ulna		5	2	3				1	6
Both bones		5	3	1			1		5
Fracture of carpus, metacarpus, or phalanges		1	1					2	3
Dislocation of humerus		2	1				1		2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

SOUTH ATLANTIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Dislocation of radius and ulna		1	1						1
Dislocation of carpus		1			1				1
Contusion of lower extremities		16	8	7			1	41	57
Sprain of hip		1	1						1
Sprain of knee		2	1	1				7	9
Sprain of ankle	1	7	8					15	23
Sprain of foot								2	2
Internal derangement of joints		1					1		1
Wound of lower extremities	1	28	23	4	1		1	29	58
Fracture of femur	2	4	4	1			1	2	8
Fracture of patella		1		1					1
Fracture of tibia	1		1					1	2
Fracture of tibia and fibula		2	2						2
Fracture of bones of foot	1	6	2	2			3		7
Of the phalanges of the toes		1		1					1

GULF.

District.	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
TOTAL CASES	**77**	**1,418**	**962**	**402**	**23**	**43**	**65**	**5,102**	**6,597**
General Diseases	**28**	**698**	**484**	**188**	**11**	**14**	**29**	**1,995**	**2,721**
Smallpox		1	1						1
Cowpox		1	1					147	148
Dengue		23	23					6	29
Influenza	1	46	43	4				70	117
Whooping cough								2	2
Mumps		5	5					1	6
Simple continued fever	1	3	3		1				4
Enteric fever	1	21	21	1				6	28
Choleraic diarrhea		1	1					7	8
Dysentery	1	23	13	4	1	2	4	59	83
Malarial fever:									
Intermittent	3	206	186	14	2	1	6	448	657
Remittent	5	96	91	6		2	2	46	147
Sloughing phagedæna		1	1						1
Erysipelas		2	1			1		2	4
Tetanus		1				1			1
Tubercle	2	45	3	33	5	4	2	61	108
Leprosy		1		1					1
Syphilis:									
Primary		7		6			1	39	46
Secondary	6	71	11	58	1	1	6	226	303
Gonorrhea	4	35	20	17	1		1	438	477
Diseases dependent on animal parasites:									
Tænia solium		3	3					1	4
Tænia mediocanellata								1	1
Ancylostomum duodenale		1					1		1
Phthirius inguinalis								6	6
Sarcoptes scabiei								4	4
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans								14	14
Tænia versicolor								3	3
Effects of animal poisons:									
Decayed and poisonous food—Fish								1	1
Effects of vegetable poisons:									
Morphine								6	6
Alcohol		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GULF—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Effects of inorganic poisons—lead								2	2
Effects of the presence of foreign bodies								3	3
Effects of heat	1	5	5	1				3	9
Scurvy		14	9	3			2	10	24
Rheumatic fever	1	15	10	5		1		6	22
Rheumatism	2	57	25	32			2	313	372
Osteoarthritis								1	1
Cyst:									
Mucous								2	2
Sebaceous		1	1					4	5
New growth, nonmalignant:									
Lipoma								1	1
Fibroma		1	1					1	2
Osteoma								2	2
Enchondroma		1	1						1
Papilloma		2	2					13	15
Pteryguim								2	2
New growth, malignant:									
Epithelioma		3	1	1			1	1	4
Carcinoma		1				1			1
Squamous carcinoma								7	7
Rodent ulcer								1	1
Myxœdema		1					1		1
Anæmia		1		1				2	3
Chlorosis		1	1						1
Diabetes mellitus								6	6
Diabetes insipidus								2	2
Debility		1		1				19	20
Local Diseases	**37**	**538**	**330**	**172**	**12**	**27**	**34**	**2,600**	**3,175**
DISEASES OF THE NERVOUS SYSTEM	6	38	11	18	2	6	7	222	266
Of the nerves—									
Inflammation—									
Neuritis		3		3				1	4
Multiple neuritis		1					1		1
Of the spinal cord and membranes—									
Cord—									
Inflammation, local								1	1
Degeneration—									
Of posterior columns		2		2				5	7
Of lateral and posterior columns		1	1						1
Of the brain and its membranes—									
Membranes—									
Inflammation of dura mater	1						1		1
Of the brain and its membranes—									
Brain—									
Inflammation—									
Diffuse		1				1			1
Acute		1	1						1
Hemorrhage	1	2				1	2		3
Functional nervous disorders, with other diseases of undetermined nature—									
Apoplexy								9	9
Paralysis—									
Paraplegia	1	1	1			1			2
Hemiplegia	1	3	2		1	1		1	5
Local paralysis		5	1	3		1		4	9
Spasm								1	1
Eclampsia uræmic		1				1			1
Epilepsy		3		2			1	1	4
Vertigo		1	1					2	3

Table VII.—Tabular Statement, by Districts, of Diseases and Injuries Treated during the Year ended June 30, 1901—Continued.

GULF—Continued.

District.	Number of cases								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE NERVOUS SYSTEM—Continued.									
Functional nervous disorders, with other diseases of undetermined nature—Continued.									
Headache		1		1				9	10
Anæsthesia								1	1
Neuralgia		4	3	1				158	162
Nervous weakness	1	5		5	1			22	28
Mental diseases—									
Mania	1	1	1	1					2
Chronic		2					2		2
Melancholia								5	5
Delusional insanity								2	2
DISEASES OF THE EYE		9	7	2				55	64
Conjunctivitis		3	3					41	44
Keratitis		1	1						1
Iritis		3	2	1					3
Choroiditis		1	1					1	2
Lenticular cataract		1		1				1	2
Capsular cataract								3	3
Glaucoma								1	1
Blepharitis marginalis								2	2
Sty								4	4
Abscess of eyelid								1	1
Trichiasis								1	1
DISEASES OF THE EAR		4	1	3				47	51
Inflammation of the external meatus—acute								8	8
Inflammation of the middle ear		1		1				16	17
Nonsuppurative		2	1	1				13	15
Suppurative		1		1				8	9
Perforation of membrana tympani								1	1
Tinnitus								1	1
DISEASES OF THE NOSE								31	31
Inflammation of soft parts								31	31
Diseases of septum								1	1
Inflammation of the accessory sinuses								1	1
DISEASES OF THE CIRCULATORY SYSTEM	2	29		23		7	1	60	91
Endocarditis		1				1			1
Valvular disease—									
Aortic		1				1		5	6
Mitral		9		7		1	1	20	29
Mitral and aortic	1	6		6		1		5	12
Degeneration of heart—fatty								1	1
Hypertrophy of heart		1		1					1
Dilatation of heart		1		1					1
Angina pectoris								6	6
Disordered action of the heart—									
Abnormal rapidity								1	1
Irregularity		1		1				5	6
Arteritis—									
Degeneration of arteries		1		1				1	2
Endarteritis		1				1			1
Aneurism of arteries	1	2		1		2		2	5
Obstruction of arteries—thrombosis		1		1					1
Phlebitis								1	1
Varix		4		4				13	17

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GULF—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE RESPIRATORY SYSTEM	3	71	55	14	1	1	3	400	474
Inflammation of mucous membrane of larynx—Catarrhal, acute								3	3
Bronchitis—									
Catarrhal, acute		25	20	4			1	329	354
Catarrhal, chronic		4		4				23	27
Spasmodic asthma	1	3	1	3				13	17
Hemorrhage of lung		3	3					2	5
Hæmoptysis								1	1
Emphysema	1		1					4	5
Œdema of lungs		1			1				1
Pneumonia	1	23	21	1		1	1	3	27
Broncho-pneumonia		2	1	1					2
Abscess of lung		1		1					1
Chronic interstitial inflammation		1					1		1
Phthisis—									
Acute								3	3
Tubercular								1	1
Pleurisy—									
Acute		7	7					18	25
Chronic		1	1						1
DISEASES OF THE DIGESTIVE SYSTEM	7	131	101	21	2	7	7	896	1,034
Inflammation of the mouth								2	2
Caries of dentine and cementum		1	1					27	28
Inflammation of the dental periosteum								2	2
Abscess of dental periosteum								7	7
Inflammation of gums and alveoli								1	1
Suppuration of alveoli								1	1
Toothache								18	18
Ulceration of the tongue								1	1
Sore throat								4	4
Inflammation of the tonsils—									
Follicular		4	4					49	53
Suppuration		2	2						2
Elongated uvula								2	2
Inflammation of salivary glands								1	1
Inflammation of the pharynx—									
Catarrhal		1	1					24	25
Follicular		2	2					2	4
Ulceration of pharynx		1	1						1
Inflammation of the stomach—Catarrhal	1	14	10	5				32	47
Ulceration of the stomach—Superficial								1	1
Dilatation of the stomach								1	1
Indigestion		8	8					229	237
Gastralgia								1	1
Inflammation of the intestines—									
Enteritis		2	2						2
Typhlitis		2	1			1			2
Colitis		1	1					1	2
Catarrhal		6	6					10	16
Fecal accumulation		5	5					2	7
Tympanites								1	1
Hernia	3	9	7	3			2	108	120
Obstruction of the intestines		1	1						1
Stricture intestines		2		1		1			2
Intestinal dyspepsia		1	1					3	4
Constipation		4	3				1	217	221
Colic		3	2				1	2	5
Diarrhea	1	17	17	1				80	98

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GULF—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Periproctitis—Abscess		5	2	1			2	2	7
Fissure of the anus		2	2						2
Fistula in ano		7	5	2				1	8
Piles—									
Internal		3	3					15	18
External		7	4	2	1			20	27
Mixed	1	2	2	1				3	6
Pruritus ani								2	2
Inflammation of the liver—									
Acute		1		1				3	4
Chronic	1	2				2	1	1	4
Hyperæmia of the liver		4	3	1				5	9
Atrophy of the liver								1	1
Hypertrophy of the liver								1	1
Jaundice		3	2	1				5	8
Accumulation of bile								3	3
Inflammation of hepatic ducts and gall bladder		4	3			1		4	8
Calculi		1		1					1
Biliary colic								1	1
Inflammation of the peritoneum		1				1			1
Dropsy		3		1	1	1			3
DISEASES OF THE LYMPHATIC SYSTEM.	2	51	35	13	2		3	59	112
Congestion of spleen								1	1
Hypertrophy of spleen								1	1
Inflammation of lymph glands	2	43	30	11	1		3	47	92
Suppuration		8	5	2	1			9	17
Inflammation of lymphatics								1	1
DISEASES OF THE SUPRARENAL CAPSULES		1				1			1
Addison's disease		1				1			1
DISEASES OF THE URINARY SYSTEM	3	20	4	13		4	2	80	103
Acute nephritis		1					1	6	7
Bright's disease	2			2				5	7
Chronic nephritis		3		1		2		4	7
Granular kidney		3		1		2			3
Nephralgia		1		1					1
Suppression of urine								1	1
Hæmaturia								2	2
Lithuria								1	1
Inflammation of bladder—									
Acute	1	8	4	4			1	51	60
Chronic		2		2				4	6
Irritability of bladder		2		2				3	5
Incontinence of urine								3	3
DISEASES OF THE GENERATIVE SYSTEM	11	77	41	40	3	1	3	225	313
Gleet								1	1
Stricture of urethra—Organic		13	6	6			1	53	66
Urethral fistula	1			1					1
Extravasation of urine		2		2					2
Inflammation of the prostate—Acute								2	2
Hypertrophy of the prostate		2		1	1			11	13
Posthitis								2	2
Phimosis		10	5	4	1			11	21
Paraphimosis		1	1					2	3
Inflammation of the penis								1	1
Of the glans								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GULF—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE GENERATIVE SYSTEM—Continued.									
Ulcer of the penis	1	7	5	3				4	12
Soft chancre	8	24	12	17	1	1	1	102	134
Sloughing of the scrotum		1	1						1
Pruritis of the scrotum								1	1
Hæmatocele of the spermatic cord								2	2
Varicocele		2	2					5	7
Hydrocele of tunica vaginalis		1		1				1	2
Inflammation of the testicle—									
Acute orchitis	1	10	6	4			1	16	27
Epididymitis		3	3					2	5
Impotence								7	7
Œdema of the scrotum								1	1
Inflammation of the ovary		1		1					1
DISEASES OF THE ORGANS OF LOCOMOTION	1	28	16	7	1		5	165	194
Inflammation of the bones—									
Osteitis								1	1
Periostitis		1		1					1
Caries		3	1				2		3
Necrosis		7	5	1			1		7
Mollities ossium		1					1		1
Inflammation of joints—									
Acute synovitis		6	5				1	9	15
Chronic synovitis		2		2					2
Ankylosis								2	2
Psoas, lumbar, and other abscesses								2	2
Posterior curvature of spine		1			1				1
Suppuration of muscles								1	1
Myalgia		6	4	2				141	147
Lumbago		1		1				3	4
Inflammation of tendons								1	1
Thecal abscess	1		1						1
Inflammation of bursæ—Acute								2	2
Inflammation mammary glands								1	1
Hypertrophy male breast								2	2
DISEASES OF THE CONNECTIVE TISSUE	1	36	28	8			1	52	89
Inflammation	1	10	9	2				24	35
Abscess		26	19	6			1	28	54
DISEASES OF THE SKIN	1	43	31	10	1		2	307	351
Erythema		2	2					5	7
Urticaria								10	10
Prickly heat								11	11
Eczema		5	4		1			49	54
Prurigo								9	9
Lichen								2	2
Psoriasis								8	8
Molluscum contagiosum								1	1
Sudamina								1	1
Herpes								19	19
Zona		1	1					2	3
Pemphigus								3	3
Dermatitis herpetiformis								1	1
Acne								1	1
Sycosis								1	1
Seborrhœa								4	4
Alopecia								1	1
Chilblain								4	4
Ulcer	1	20	14	6			1	90	111
Boil		6	4	2				41	47

Table VII.—Tabular Statememt, by Districts, of Diseases and Injuries Treated during the Year ended June 30, 1901—Continued.

GULF—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Diseases of the Skin—Continued.									
Carbuncle		3	3					8	11
Whitlow		3	2	1				28	31
Onychia		1	1					1	2
Corn								3	3
Wen								1	1
Lupus		2		1			1	3	5
Injuries	**12**	**182**	**148**	**42**		**2**	**2**	**507**	**701**
General Injuries	1	20	11	10				23	44
Effects of heat—									
Burns and scalds	1	15	9	7				20	36
Heat stroke		1	1						1
Effects of chemical irritants and corrosives								1	1
Multiple injury		2		2				2	4
Exhaustion		2	1	1					2
Local Injuries	11	162	137	32		2	2	484	657
Contusion of muscles		1	1					1	2
Strain of muscles		1	1					7	8
Rupture of muscles								2	2
Rupture of tendons		1	1						1
Contusion of skin								1	1
Abrasion of skin								4	4
Burn or scald of skin		1	1						1
Frostbite								65	66
Effects on the skin of irritants or corrosives		1	1					1	2
Contusion of scalp								2	2
Wound of scalp		4	3	1				23	27
With injury to the aponeurosis								1	1
Contusion of face	1	1	2					3	5
Wound of face and mouth		4	4					7	11
Fracture of facial bones		1	1						1
Contusion of eyelid		1	1					1	2
Wound of eyelid		1	1						1
Contusion of eyeball								1	1
Foreign bodies in the conjunctiva or cornea								7	7
Wound of pinna		1	1						1
Foreign body in external meatus								1	1
Wound of neck								1	1
Contusion of chest		4	4					38	42
Fracture of ribs		9	8	1				3	12
Contusion of back		2	1	1				16	18
Sprain of back		4	3	1				18	22
Wound of back		1	1					1	2
Contusion of abdomen		1	1					2	3
Wound of parieties of abdomen		3	3					3	6
Contusion of the pelvis								2	2
Contusion of the perineum, scrotum, or penis								1	1
Wound of the male urethra, perineum, scrotum, testis, or penis	1		1					3	4
Wound of bladder		1				1			1
Contusion of testicle								1	1
Contusion of upper extremities		6	5	1				44	50
Sprain of shoulder								15	15
Sprain of elbow								7	7
Sprain of wrist		1		1				5	6
Sprain of hand								1	1
Sprain of fingers								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GULF—Continued.

District.	Number of cases.								
			Discharged.						
	Remaining under treatment from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
LOCAL INJURIES—Continued.									
Wound of upper extremities	1	45	31	14		1		93	139
Fracture of clavicle	1	2	2	1				4	7
Fracture of humerus	1		1					1	2
Fracture of bones of forearm—									
Ulna		3	1	1			1		3
Both bones		2	2						2
Fracture of carpus, metacarpus, or phalanges		1		1				2	3
Dislocation of clavicle		1	1						1
Dislocation of humerus		5	4	1					5
Contusion of lower extremities		11	11					37	48
Sprain of hip								4	4
Sprain of knee		1	1					8	9
Sprain of ankle	1	13	11	3				8	22
Sprain of foot								2	2
Wound of lower extremities	3	17	17	2			1	33	53
Fracture of femur	1	1	2						2
Fracture of patella		1	1						1
Fracture of tibia	1	2	1	2					3
Fracture of fibula		2	1	1					2
Fracture of tibia and fibula		4	4					2	6
Dislocation of femur		1	1						1

OHIO.

TOTAL CASES	**38**	**1,107**	**761**	**287**	**18**	**25**	**51**	**4,194**	**5,339**
General Diseases	**18**	**144**	**303**	**131**	**6**	**8**	**14**	**1,774**	**2,236**
Smallpox	2	7	8		1			2	11
Cowpox		1		1				15	16
Chickenpox		1	1						1
Influenza		70	63	6	1			176	246
Mumps		4	4					7	11
Diphtheria		1	1					1	2
Enteric fever	4	16	17	1		1	1		20
Dysentery	3	18	20				1	25	46
Malarial fever:									
Intermittent		75	65	9			1	302	377
Remittent		14	12				2	9	23
Erysipelas		4	4					2	6
Tubercle	1	35		24	2	7	3	56	92
Syphilis:									
Primary		6	3	3				4	10
Secondary	2	53	1	50	1		3	297	352
Gonorrhea	2	18	9	11				399	419
Dieases dependeut on animal parasites:									
Tænia solium								1	1
Sarcoptes scabiei								1	1
Diseases dependent on vegatable parasites:									
Trichophyton tonsurans		1	1					3	4
Effects of vegetable poisons:									
Tobacco								1	1
Cocaine		1	1						1
Effects of heat								1	1
Alcoholism		19	17	2				16	35
Rheumatic fever		8	6	1			1		8
Rheumatism	4	85	69	18			2	408	497
Cyst, sebaceous								1	1

Table VII.—Tabular Statement, by Districts, of Diseases and Injuries Treated during the Year ended June 30, 1901—Continued.

OHIO—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
New growth, nonmalignant:									
Fibroma		1	1						1
Papilloma								8	8
New growth, malignant:									
Sarcoma		1			1				1
Squamous carcinoma								1	1
Diabetes mellitus		2		2					2
Diabetes insipidus								2	2
Debility		3		3				36	39
Local Diseases	**16**	**488**	**326**	**124**	**12**	**14**	**28**	**2,095**	**2,599**
DISEASES OF THE NERVOUS SYSTEM	4	18	9	6			7	86	108
Of the nerves—									
Inflammation, neuritis		2	2					3	5
Of the spinal cord and membranes—									
Cord—									
Inflammation—hemorrhage		1	1						1
Degeneration—									
Of lateral columns		1		1					1
Of posterior columns	1	4		3			2	9	14
Functional nervous disorders with other diseases of undetermined nature—									
Paralysis—									
Hemiplegia	3						3		3
Local paralysis		1		1					1
Spasm								1	1
Torticollis		1	1						1
Epilepsy								1	1
Tetany								3	3
Headache								12	12
Hyperæsthesia								1	1
Neuralgia		6	4				2	52	58
Nervous weakness		2	1	1				4	6
DISEASES OF THE EYE	2	6	4	4				38	46
Conjunctivitis								23	23
Conjunctivitis, catarrhal		1	1						1
Acute								7	7
Purulent	1			1					1
Glaucoma		1	1						1
Ulceration of cornea								3	3
Iritis	1	4	2	3				1	6
Lenticular cataract								1	1
Ametropia								1	1
Blepharitis marginalis								1	1
Trichiasis								1	1
Œdema of eyelid								1	1
DISEASES OF THE EAR								13	13
Inflammation of the external meatus—Acute								1	1
Accumulation in external meatus of wax or epidermis								2	2
Inflammation of the middle ear—									
Nonsuppurative								8	8
Suppurative								1	1
DISEASES OF THE NOSE		2		1			1	51	53
Inflammation of soft parts		2		1			1	51	53
Diseases of septum								4	4
Deviations								1	1
Epistaxis								1	1
Inflammation of the naso-pharynx								2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

OHIO—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE CIRCULATORY SYSTEM		22	1	12	1	7	1	34	56
Pericarditis		1				1			1
Endocarditis		1		1					1
Valvular disease—									
Aortic		3		2		1		1	4
Mitral		6		2		3	1	18	24
Aortic and mitral		2		1		1			2
Inflammation muscular substance of heart								1	1
Hypertrophy of heart								2	2
Dilatation of heart		2		2				3	5
Disordered action of the heart—									
Abnormal rapidity		1		1				2	3
Irregularity								1	1
Arteritis—Degeneration of arteries								1	1
Aneurism of arteries		4		2	1	1		2	6
Phlebitis		1	1					3	4
Varix		1		1					1
DISEASES OF THE RESPIRATORY SYSTEM		92	66	17	1	6	2	456	548
Hay fever								1	1
Inflammation of mucous membrane of larynx—Catarrhal, acute		1		1				3	4
Bronchitis—									
Catarrhal, acute		45	39	5			1	420	465
Catarrhal, chronic		6	1	4			1	10	16
Spasmodic asthma		3	1	2				18	21
Congestion of lung		1				1			1
Hemorrhage of lung—Hæmoptysis								1	1
Pneumonia		25	18	1	1	5			25
Phthisis—Tubercular		1		1					1
Pleurisy—									
Acute		7	6	1				3	10
Chronic		3	1	2					3
DISEASES OF THE DIGESTIVE SYSTEM	1	101	70	24	4		4	701	803
Inflammation of the mouth								2	2
Ulceration of the mouth								3	3
Caries of dentine and cementum								4	4
Inflammation of the dental periosteum		1	1					1	2
Abscess of dental periosteum		1	1					5	6
Ulceration of gums and alveoli								1	1
Toothache								7	7
Sore throat								8	8
Inflammation of the tonsils—									
Follicular		11	11					51	62
Suppuration		2	1	1					2
Inflammation of the pharynx								26	26
Ulceration of pharynx								1	1
Inflammation of the stomach—catarrhal		5	1	3			1	119	124
Ulceration of the stomach—superficial								1	1
Indigestion		4	3	1				82	86
Gastralgia								2	2
Loss of appetite								3	3
Inflammation of the intestines—									
Enteritis		8	6	2				53	61
Typhlitis		2	2						2
Colitis		2	1	1				1	3
Catarrhal	1	21	18	3			1	40	62

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

OHIO—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Hernia		2	2					49	51
Intestinal dyspepsia								5	5
Constipation								65	65
Colic		1	1					11	12
Diarrhea		19	11	8				90	109
Enteralgia								1	1
Inflammation of the rectum								5	5
Periproctitis—abscess		1	1						1
Ulceration of rectum		1			1				1
Fistula in ano		8	4	1	2		1	2	10
Piles—									
Internal								12	12
External		6	4	1			1	11	17
Mixed		1		1				11	12
Pruritus ani								3	3
Inflammation of the liver, acute								20	20
Hyperæmia of the liver								1	1
Jaundice		1	1					5	6
Inflammation of hepatic ducts and gall bladder		3	1	1	1				3
Calculi		1		1					1
DISEASES OF THE LYMPHATIC SYSTEM		58	40	16			2	65	123
Inflammation of lymph glands		24	19	4			1	59	83
Suppuration		34	21	12			1	4	38
Hypertrophy of lymph glands								2	2
DISEASES OF THE THYROID BODY		1		1					1
Goitre		1		1					1
DISEASES OF THE URINARY SYSTEM		14	4	7	1	1	1	36	50
Acute nephritis		1		1					1
Bright's disease		5		4	1			3	8
Chronic nephritis		2				1	1	6	8
Calculus in kidney		1		1					1
Hæmaturia								1	1
Inflammation of bladder—									
Acute		5	4	1				17	22
Chronic								1	1
Irritability of bladder								5	5
Retention of urine								1	1
Incontinence of urine								2	2
DISEASES OF THE GENERATIVE SYSTEM	6	86	65	17	4		6	257	349
Urethritis								5	5
Gleet								5	5
Ulcer of the urethra		1	1						1
Stricture of urethra—organic		12	8	2	1		1	27	39
Phimosis	2	10	10	1			1	3	15
Paraphimosis		1	1						1
Inflammation of the penis—of the glans								5	5
Abscess of penis								1	1
Ulcer of penis	1	2	1	1			1	1	4
Soft chancre	3	31	22	10	1		1	157	191
Chordee								2	2
Inflammation of the spermatic cord								1	1
Hydrocele of the spermatic cord		1					1		1
Varicocele		2	1	1				9	11
Hydrocele of tunica vaginalis		2	1	1				2	4

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

OHIO—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE GENERATIVE SYSTEM—Continued.									
Inflammation of the testicle—									
Acute orchitis		18	17	1				27	45
Chronic orchitis		2			2				2
Epididymitis		2	2					1	3
Spermatorrhea								2	2
Impotence								2	2
Gangrene of penis		1					1		1
Inflammation of the ovary								1	1
Inflammation of the uterus								1	1
Dysmenorrhea								1	1
Leucorrhea		1	1					4	5
DISEASES OF THE ORGANS OF LOCOMOTION		25	18	6	1			157	182
Inflammation of the bones—periostitis								2	2
Caries		1	1						1
Necrosis		1	1						1
Ununited fracture or false joint		1	1						1
Inflammation of joints—acute synovitis		3	1	2				4	7
Anchylosis		1			1				1
Psoas, lumbar, and other abscesses		2	1	1				4	6
Myalgia		12	10	2				122	134
Lumbago		1		1				24	25
Inflammation of tendons								1	1
Inflammation of bursæ—acute		2	2						2
Bunion		1	1						1
DISEASES OF THE CONNECTIVE TISSUE	1	33	27	5			2	36	70
Inflammation	1	13	12	2				13	27
Abscess		19	14	3			2	22	41
Gangrene		1	1						1
Œdema								1	1
DISEASES OF THE SKIN	2	30	22	8			2	161	193
Urticaria		1	1					11	12
Prickly heat								4	4
Eczema		2	1	1				36	38
Prurigo								2	2
Psoriasis								1	1
Herpes								9	9
Zona								2	2
Acne								4	4
Sycosis								3	3
Ichthyosis								1	1
Ulcer	1	20	15	4			2	41	62
Boil	1	3	3	1				34	38
Carbuncle		1	1					3	4
Whitlow		3	1	2				2	5
Onychia								2	2
Corn								1	1
Wen								2	2
Pruritus								3	3
Injuries	4	175	135	32		3	9	325	504
GENERAL INJURIES		14	11	2		1		27	41
Effects of heat—									
Burns and scalds		10	8	2				26	36
Heat stroke		1	1						1
Effects of chemical irritants and corrosives								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

OHIO—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
GENERAL INJURIES—Continued.									
Multiple injury		2	2						2
Shock		1				1			1
LOCAL INJURIES	4	161	124	30		2	9	298	463
Compression of nerve								2	2
Strain of muscles								2	2
Abrasion of skin								5	5
Burn or scald of skin								1	1
Frostbite	1		1					5	6
Abrasion of mucous membrane								1	1
Burn or scald of mucous membrane		1		1					1
Contusion of scalp								1	1
Wound of scalp		4	1	1			2	9	13
With injury to the aponeurosis		2	2					2	4
Fracture of the base of skull		2	1			1		1	3
Wound of skull		1	1						1
Contusion of face		2	2					1	3
Wound of face and mouth		4	2	2				11	15
Fracture of facial bones								1	1
Contusion of eyelid								2	2
Wound of eyelid		1	1						1
Contusion of eyeball		1	1						1
Foreign bodies in the conjunctiva or cornea								14	14
Wound of eyeball		1		1				1	2
Contusion of chest		3	3					6	9
Fracture of ribs		6	4				2	4	10
Wound of parietes of chest		1	1					4	5
Gunshot wound of chest								1	1
Contusion of back		5	4	1				8	13
Sprain of back		9	9					11	20
Wound of back		2	1	1				2	4
Contusion of abdomen	1	1	1				1	2	4
Wound of parietes of abdomen		2	1			1			2
Wound of the male urethra, perinæum, scrotum, testis, or penis								1	1
Contusion of upper extremities		11	9	1			1	43	54
Sprain of shoulder								2	3
Sprain of elbow								2	2
Sprain of wrist								8	8
Sprain of thumb								2	2
Wound of upper extremities	1	21	18	4				59	81
Wound of joint, upper extremities		1	1						1
Fracture of clavicle		1		1					1
Fracture of humerus								1	1
Fracture of bones of forearm—									
Radius		1	1						1
Both bones		2	2					2	4
Fracture of carpus, metacarpus, or phalanges								1	1
Dislocation of humerus		2	2						2
Contusion of lower extremities	1	27	22	6				38	66
Sprain of hip								1	1
Sprain of knee		1					1	5	6
Sprain of ankle		15	13	2				14	29
Sprain of foot								1	1
Wound of lower extremities		24	17	7				16	40
Fracture of patella		1					1		1
Fracture of fibula		3	1	1			1	1	4
Fracture of tibia and fibula		1	1						1
Fracture of bones of foot								1	1
Of the phalanges of the toes		1	1					2	3
Dislocation of foot		1		1				1	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MISSISSIPPI.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
TOTAL CASES	57	1,328	913	366	21	48	37	4,134	5,519
General Diseases	32	721	529	166	13	22	23	2,316	3,099
Smallpox		9	8		1			2	11
Cowpox								394	394
Chicken pox		1	1						1
Influenza		14	38	5		1		98	142
Mumps		1	1					2	3
Diphtheria		2	2						2
Simple continued fever		1	1						1
Enteric fever	1	20	15	2		2	2	1	22
Dysentery	2	15	16	1				15	32
Malarial fever:									
Intermittent	7	311	292	18	1		7	664	982
Remittent		17	10	4		2	1	3	20
Erysipelas		11	10				1	7	18
Septicæmia		2	1				1		2
Tubercle	9	14	4	28	4	13	4	28	81
Syphilis:									
Primary		2		2				37	39
Secondary	8	80		78	3	1	6	305	393
Gonorrhea		23	16	7				282	305
Diseases dependent on animal parasites:									
Tænia solium		5	4		1			4	9
Phthirius inguinalis								2	2
Sarcoptes scabiei								2	2
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans								9	9
Effects of vegetable poisons:									
Opium		1	1						1
Rhus								1	1
Effects of inorganic poisons—Lead		1		1				1	2
Effects of heat		1					1		1
Effects of excessive exertions and strain		2	2						2
Alcoholism		20	19	1				17	37
Rheumatic fever		19	18	1				4	23
Rheumatism	5	78	65	15	2	1		389	472
Cyst—Sebaceous		1		1				1	2
New growth, nonmalignant.									
Lipoma								5	5
Fibroma		1	1						1
Papilloma		2		2				3	5
New growth, malignant:									
Sarcoma		1			1				1
Squamous carcinoma		1	1					2	3
Glandular carcinoma		1				1			1
Anæmia								3	3
Diabetes mellitus								3	3
Diabetes insipidus								1	1
Congenital malformations		1	1						1
Debility		3	2			1		61	64
Local Diseases	19	438	259	159	7	21	11	1,526	1,983
DISEASES OF THE NERVOUS SYSTEM		24	6	14	1	2	1	44	68
Of the nerves—									
Inflammation—Neuritis		2	1	1					2
Of the spinal cord and membranes—									
Cord—									
Inflammation—Local		1		1					1
Degeneration—									
Of posterior columns		3		3				1	4
Of lateral and posterior columns		1		1					1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MISSISSIPPI—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE NERVOUS SYSTEM—Continued.									
Of the brain and its membranes—Membranes—									
Inflammation—Of dura mater		1	1						1
Of the brain and its membranes—Brain—									
Inflammation		1				1			1
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy		1				1			1
Paralysis								7	7
Spasm								1	1
Occupation neurosis		1		1					1
Epilepsy		4		3			1	5	9
Vertigo								3	3
Headache		1			1			3	4
Neuralgia		7	4	3				22	29
Aphasia		1		1					1
Nervous weakness								2	2
DISEASES OF THE EYE		6	4	2				36	42
Conjunctivitis		5	3	2				35	40
Blepharitis marginalis		1	1					1	2
DISEASES OF THE EAR		6	4	2				21	27
Inflammation of the external meatus—									
Acute								6	6
Abscess		1	1						1
Accumulation in external meatus of wax or epidermis								11	11
Inflammation of the middle ear—									
Nonsuppurative		4	3	1				3	7
Suppurative		1		1					1
Perforation of membrana tympani								1	1
DISEASES OF THE NOSE								12	12
Inflammation of soft parts								12	12
Diseases of septum								3	3
Epistaxis								1	1
Inflammation of the naso-pharynx								2	2
DISEASES OF THE CIRCULATORY SYSTEM	4	26	2	21		6	1	69	99
Valvular disease—									
Aortic	1	3		4				2	6
Mitral	3	18	1	15		5		45	66
Aortic and mitral		1		1					1
Degeneration of blood vessels								1	1
Hypertrophy of heart								1	1
Dilatation of heart		1	1					1	2
Angina pectoris								1	1
Disordered action of the heart—Irregularity								14	14
Aneurysm of arteries		1				1		1	2
Varix		2		1			1	2	4
Rupture of capillaries								1	1
DISEASES OF THE RESPIRATORY SYSTEM	1	72	53	12		7	1	318	391
Inflammation of mucous membrane of larynx—Catarrhal, acute		2	2					2	4

Table VII.—Tabular Statement, by Districts, of Diseases and Injuries Treated during the Year ended June 30, 1901—Continued.

MISSISSIPPI—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Diseases of the Respiratory System—Continued.									
Bronchitis—									
Catarrhal, acute		28	24	4				277	305
Catarrhal, chronic		4	1	3				8	12
Spasmodic asthma		6	4	2				6	12
Pneumonia		23	15	1		6	1	2	25
Phthisis—Acute	1	6	4	2		1		23	30
Emphysema, vesicular		2	2						2
Empyema		1	1						1
Diseases of the Digestive System	3	108	80	24	3	2	2	571	682
Inflammation of the mouth								7	7
Ulceration of the mouth								1	1
Gangrene of the mouth								1	1
Caries of dentine and cementum								6	6
Necrosis of cementum								6	6
Inflammation of gums and alveoli								1	1
Honey tooth								1	1
Sore throat		5	5					48	53
Inflammation of the tonsils—									
Follicular		4	4					22	26
Suppuration		3	1	1	1				3
Elongated uvula								1	1
Salivation								3	3
Inflammation of the pharynx—Catarrhal		4	4					4	8
Inflammation of the stomach—Catarrhal	1	5	3	2		1		16	22
Ulceration of the stomach—Superficial		1	1						1
Hemorrhage of the stomach		1	1						1
Indigestion	1	6	5	1			1	73	80
Nausea								1	1
Loss of appetite								1	1
Inflammation of the intestines—									
Enteritis		1	1					2	3
Typhlitis		3	3						3
Colitis								10	10
Catarrhal		8	6	2				6	14
Ulceration of the intestines		1	1						1
Hernia		4		4				74	78
Constipation		2	2					130	132
Colic		2	2					6	8
Diarrhea		35	32	2	1			95	130
Enteralgia								1	1
Fistula in ano		3	1	1		1		1	4
Prolapse of the rectum		1		1					1
Piles—									
External		4	2	1			1	33	37
Mixed		5		4	1			2	7
Inflammation of the liver—									
Acute		1		1				1	2
Acute abscess	1		1						1
Hyperæmia of the liver								1	1
Hypertrophy of the liver								6	6
Jaundice		5	2	3				2	7
Inflammation of hepatic ducts and gall bladder		2	1	1				8	10
Calculi								1	1
Inflammation of the peritoneum		2	2						2
Diseases of the Lymphatic System	3	26	19	7	1		2	31	60
Hypertrophy of spleen		1			1				1
Inflammation of lymph glands	2	18	14	6				29	49
Suppuration	1	7	5	1			2	2	10

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MISSISSIPPI—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE URINARY SYSTEM	1	23	4	16		4		32	56
Acute nephritis		2		2				1	3
Bright's disease		8		8				7	15
Chronic nephritis		5		1		4			5
Hæmaturia								1	1
Lithuria								1	1
Inflammation of bladder—Acute	1	8	4	5				19	28
Calculus of bladder								1	1
Irritability of bladder								2	2
DISEASES OF THE GENERATIVE SYSTEM	2	69	44	27				164	235
Urethritis								2	2
Abscess of the urethra		2	2					1	3
Stricture of urethra—Organic		15	10	5				39	54
Urethral fistula		1		1				1	2
Hypertrophy of the prostate								1	1
Posthitis								2	2
Phimosis		3	2	1				1	4
Paraphimosis		3	2	1					3
Inflammation of the penis—Of the glans		1	1					3	4
Ulcer of penis	1	1	1	1				4	6
Soft chancre	1	35	22	14				95	131
Varicocele								1	1
Inflammation of the testicle—									
Acute orchitis		5	3	2				5	10
Epididymitis		1		1				5	6
Impotence								2	2
Inflammation of cervix uteri								1	1
Abscess of the uterus		2	1	1					2
Amenorrhea								1	1
DISEASES OF THE ORGANS OF LOCOMOTION	1	19	11	7			2	55	75
Inflammation of the bones—periostitis		3	2	1					3
Caries		2	1	1				1	3
Necrosis		2		2				3	5
Inflammation of joints—acute synovitis	1	1	2						2
Ankylosis		1		1					1
Myalgia		5	3	1			1	41	46
Lumbago		3	3					1	4
Inflammation of tendons								2	2
Bunion		2		1			1	6	8
Bursal tumor								1	1
DISEASES OF THF CONNECTIVE TISSUE	1	22	15	7	1			28	51
Inflammation	1	9	8	1	1			12	22
Abscess		12	6	6				16	28
Œdema		1	1						1
DISEASES OF THE SKIN	3	37	17	20	1		2	142	182
Erythema								1	1
Urticaria		1	1					7	8
Prickly heat								2	2
Eczema		1		1				40	41
Prurigo								1	1
Herpes								2	2
Dermatitis herpetiformis		1		1				1	2
Ulcer	3	31	14	17	1		2	46	80
Boil		3	2	1				24	27
Carbuncle								3	3
Whitlow								8	8
Pruritus								7	7

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MISSISSIPPI—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Injuries	6	169	125	41	1	5	3	262	437
GENERAL INJURIES		3	3					9	12
Effects of heat									
Burns and scalds		2	2					9	11
Heat stroke		1	1						1
LOCAL INJURIES	6	166	122	41	1	5	3	253	425
Strain of muscles		1	1					2	3
Wound of skin		1		1				1	2
Burn or scald of skin		3	1	1		1			3
Burn or scald of mucous membrane		1				1			1
Contusion of scalp		2	2						2
Wound of scalp		8	6	2					8
With injury to the aponeurosis								22	22
Contusion of skull		1			1				1
Fracture of the vault of skull		1				1			1
Contusion of face		2	2					2	4
Wound of face and mouth		1	1					4	5
Dislocation of lower jaw								1	1
Foreign bodies in the conjunctiva or cornea								5	5
Wound of pinna		1		1				1	2
Wound of neck								2	2
Contusion of chest		6	6					10	16
Dislocation of costal cartilages		3	2	1				1	4
Fracture of ribs		2		1			1		2
Contusion of back		5	5					3	8
Gunshot wound of chest		3	3						3
Sprain of back		2	2					9	11
Wound of back		1				1		3	4
Dislocation of spine		1				1			1
Concussion of cord								2	2
Contusion of abdomen	1	1	1				1	1	3
Wound of parietes of abdomen		2	1	1				1	3
Contusion of the pelvis								1	1
Contusion of the perineum, scrotum, or penis								2	2
Wound of the male urethra, perineum, scrotum, testis, or penis	1	3	3	1					4
Fracture or dislocation of pelvic bones		1		1					1
Contusion of upper extremities		11	10	1				31	42
Sprain of shoulder								1	1
Sprain of wrist		4	2	2				8	12
Sprain of hand								1	1
Wound of upper extremities	1	16	11	6				68	85
Fracture of clavicle		1		1					1
Fracture of humerus		3	2	1					3
Fracture of bones of forearm									
Radius		2	2						2
Ulna		1	1						1
Both bones		2	1	1					2
Fracture of carpus, metacarpus, or phalanges		3	2	1				2	5
Dislocation of humerus	1	4	5						5
Contusion of lower extremities		23	17	6				26	49
Sprain of hip								1	1
Sprain of ankle		9	7	2				6	15
Sprain of foot								1	1
Wound of lower extremities	1	24	16	8			1	32	57
Fracture of femur		3	3					2	5
Fracture of patella		1	1						1
Fracture of tibia		3	2	1					3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

MISSISSIPPI—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Fracture of fibula		1	1					1	2
Fracture of tibia and fibula	1	2	3						3
Fracture of the tarsus		1		1					1

GREAT LAKES.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
TOTAL CASES	127	2,247	1,432	687	49	69	137	10,113	12,487
General diseases	44	857	515	281	21	36	48	4,502	5,403
Smallpox		8	5	2	1			2	10
Cowpox								904	904
Chicken pox		1	1					1	2
Measles	1	3	4						4
Scarlet fever	1	4	4	1					5
Influenza	1	76	75	1		1		218	295
Mumps		3	3					8	11
Diphtheria		3	2	1					3
Simple continued fever		11	6	5				14	25
Enteric fever	9	160	115	18	4	15	17	30	199
Choleraic diarrhea		4	4					19	23
Epidemic diarrhea		2	2					38	40
Dysentery	2	19	12	7			2	27	48
Malarial fever:									
Intermittent	2	47	44	4			1	105	154
Remittent		12	10	2				4	16
Erysipelas		10	8	2				7	17
Tetanus		1				1			1
Tubercle	5	78	1	51	5	13	13	55	138
Syphilis:									
Primary		5	1	4				64	69
Secondary	4	78	2	74	1	1	4	795	877
Gonorrhea	1	72	51	18	1		3	1,102	1,175
Diseases dependent on animal parasites:									
Tænia solium		6		6				8	14
Tænia mediocanellata		2		2					2
Ascaris lumbricoides								1	1
Oxyuris vermicularis								1	1
Phthirius inguinalis								5	5
Sarcoptes scabiei								16	16
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans	1	2	2	1				43	46
Microsporon furfur		1		1				6	7
Effects of animal poisons:									
Decayed and poisonous food		1	1						1
Spider								1	1
Effects of vegetable poisons:									
Opium								3	3
Tobacco		3	1	2				5	8
Rhus		1	1					3	4
Acetanilid								1	1
Effects of inorganic poisons—lead	1		1					1	2
Effects of the presence of foreign bodies								4	4
Effects of heat		2	2					1	3
Effects of cold		1	1						1
Effects of chemical agents		1	1						1
Effects of excessive exertions and strain								5	5
Alcoholism	1	49	43	3		1	3	43	93

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Rheumatic fever	5	23	15	11			2	17	45
Rheumatism	10	118	72	52	2		2	657	785
Gout		1		1				1	2
Osteoarthritis		1		1				2	3
Cyst:									
Mucous		2	2					4	6
Sebaceous		1	1					1	2
New growth, nonmalignant:									
Polypus		3	1	2				2	5
Lipoma		3	3					2	5
Fibroma								1	1
Myxoma								1	1
Papilloma		5	3	2				31	36
Adenoma								1	1
Pterygium		5	5					7	12
New growth, malignant:									
Sarcoma		3	2		1			2	5
Carcinoma		5		1	2	2		1	6
Squamous carcinoma		2			1	1			2
Epithelioma		3	1		1	1		2	5
Myxœdema		1		1					1
Anæmia		2	1	1				12	14
Purpura								1	1
Hemophilia		1		1					1
Diabetes mellitus		3		1	1		1	6	9
Debility		9	6	2	1			211	220
Local Diseases	**51**	**953**	**629**	**264**	**25**	**29**	**57**	**1,708**	**5,712**
DISEASES OF THE NERVOUS SYSTEM	11	58	24	25	2	3	15	210	279
Of the nerves—									
Inflammation—Neuritis	2	9	3	8				9	20
Of the spinal cord and membranes—									
Membranes—									
Inflammation—Of dura mater		1					1		1
Of the spinal cord and membranes—									
Cord—									
Inflammation—Local								2	2
Degeneration—Of posterior columns	5	1				1	5	13	19
Of the brain and its membranes—									
Membranes—									
Inflammation—Of dura mater								1	1
Hemorrhage	1		1						1
Of the brain and its membranes—									
Brain—									
Sclerosis		1					1		1
Hemorrhage	1						1		1
Hyperæmia		1				1			1
Functional nervous disorders with other diseases of undetermined nature									
Apoplexy		3	1	1			1		3
Paralysis—									
Paraplegia		2	2						2
Hemiplegia	1	7		3		1	4		8
Local paralysis								3	3
Incomplete paralysis		2	2						2
Spasm		1	1					2	3
Torticollis		1	1						1
Epilepsy	1	4		4	1			7	12
Vertigo								6	6
Headache		3	3					25	28
Anæsthesia								2	2
Neuralgia		18	9	8			1	82	100

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged. Recovered.	Discharged. Improved.	Discharged. Not improved.	Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
DISEASES OF THE NERVOUS SYSTEM—Continued.									
Functional nervous disorders with other diseases of undetermined nature—Continued.									
Trance								1	1
Nervous weakness		4	1	1	1		1	56	60
Mental diseases—Delusional insanity								1	1
DISEASES OF THE EYE		18	8	8	1		1	89	107
Conjunctivitis		7	3	3	1			51	58
Conjunctivitis—									
Catarrhal								3	3
Acute								4	4
Ecchymosis of conjunctiva								1	1
Keratitis		1		1				4	5
Ulceration of cornea		2	1	1				2	4
Iritis		4	3	1				7	11
Atrophy and degeneration of optic nerve or papilla								1	1
Lenticular cataract		1					1		1
Dislocation of lens								1	1
Ametropia		1		1				2	3
Presbyopia								1	1
Dacryo-cystitis, chronic		1		1				1	2
Abscess lachrymal sac								2	2
Obstruction of nasal duct								1	1
Blepharitis marginalis								1	1
Sty								2	2
Abscess of eyelid		1	1					1	2
Trichiasis								4	4
DISEASES OF THE EAR		8	5	3				70	78
Inflammation of the external meatus—									
Acute								3	3
Abscess		1	1						1
Accumulation in external meatus of wax or epidermis		1	1					30	31
Inflammation of the middle ear—									
Nonsuppurative		1		1				18	19
Suppurative		5	3	2				14	19
Obstruction of Eustachian tube								4	4
Tinnitus								1	1
DISEASES OF THE NOSE		2	1	1				27	29
Inflammation of soft parts		1		1				27	28
Inflammation of framework—Necrosis		1	1						1
Diseases of septum								24	24
Hæmatoma								1	1
Epistaxis								2	2
Inflammation of the naso-pharynx								21	21
DISEASES OF THE CIRCULATORY SYSTEM	7	73	42	22	2	8	6	109	189
Pericarditis		2		1		1		1	3
Endocarditis		3	2			1			3
Valvular diseases—									
Aortic	3	8	7	2		2		8	19
Mitral	3	27	23			2	5	36	66
Aortic and mitral		9		8		1		5	14
Tricuspid		1					1		1
Degeneration of heart—Fatty		1		1					1
Hypertrophy of heart		1		1				1	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
DISEASES OF THE CIRCULATORY SYSTEM—Continued.									
Dilatation of heart		1				1		5	6
Angina pectoris		1		1				2	3
Disordered action of the heart—Irregularity		1	1					17	18
Arteries—Degeneration of arteries								3	3
Aneurism of arteries		2		2					2
Nævus								2	2
Raynaud's disease		1		1					1
Phlebitis		1		1				8	9
Varix	1	14	9	4	2			20	35
Disease coronary arteries								1	1
DISEASES OF THE RESPIRATORY SYSTEM	7	146	80	52	5	7	9	1,010	1,163
Hay fever								1	1
Inflammation of mucous membrane of larynx—									
Catarrhal, acute		1	1					11	12
Membranous		1					1		1
Tracheitis								4	4
Bronchitis—									
Catarrhal, acute	1	42	31	12				681	724
Catarrhal, chronic	1	19	5	12	1		2	182	202
Spasmodic asthma	1	13	1	13				45	59
Congestion of lung		1	1					24	25
Hemorrhage of lung		1	1						1
Pneumonia	3	22	12	5	1	6	1	2	27
Broncho-pneumonia		8	5	3					8
Phthisis—									
Acute		1				1		6	7
Chronic		1			1			7	8
Tubercular	1						1	6	7
Emphysema								1	1
Pleurisy—									
Acute		29	22	5			2	28	57
Chronic		4		1	2		1	11	15
Empyema		3	1	1			1		3
Miner's asthma								1	1
DISEASES OF THE DIGESTIVE SYSTEM	8	223	166	39	11	7	8	1,427	1,658
Inflammation of the lips								1	1
Ulceration of the lips		1		1				4	5
Inflammation of the mouth		1	1					8	9
Ulceration of the mouth								4	4
Suppuration of the dental pulp								4	4
Abscess of dental periosteum								4	4
Inflammation of gums and alveoli								2	2
Ulceration of gums and alveoli								4	4
Toothache								1	1
Ulceration of the tongue								3	3
Sore throat								25	25
Ulcer of soft palate								1	1
Inflammation of the tonsils—									
Follicular		20	17	3				94	114
Suppuration		9	7	1	1			3	12
Hypertrophy of tonsils		1	1					1	2
Elongated uvula								1	1
Inflammation of salivary glands		1		1				2	3
Salivary calculi								1	1
Inflammation of the pharynx—									
Catarrhal		5	2	2	1			42	47
Follicular		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Ulceration of pharynx								1	1
Inflammation of the stomach—Catarrhal	2	29	24	4	1		2	93	124
Ulceration of the stomach—Superficial								5	5
Hemorrhage of the stomach		1					1	1	2
Indigestion	1	12	8	5				406	419
Eructation								1	1
Pyrosis								17	17
Vomiting								1	1
Gastralgia								8	8
Heartburn								2	2
Loss of appetite								40	40
Inflammation of the intestines—									
Enteritis	1	1	1				1		2
Typhlitis		18	9	4		3	2	5	23
Colitis	1	1	2						2
Catarrhal	1	12	12		1			9	22
Fecal accumulation								3	3
Hernia		21	13	4	2	1	1	122	143
Constipation		4	4					137	141
Colic		14	13				1	10	24
Diarrhea	2	31	29	3	1			215	248
Enteralgia								4	4
Inflammation of the rectum		1	1						1
Periproctitis—Abscess		2	2						2
Ulceration of anus								1	1
Fistula in ano		7	3	3	1			9	16
Prolapse of the rectum		1	1						1
Piles—									
Internal		3	1	1	1			31	34
External		3	2	1				42	45
Mixed		4	3	1				6	10
Pruritus ani								5	5
Inflammation of the liver—									
Acute		1		1				9	10
Chronic		7	1	1	2	3		7	14
Hyperæmia of the liver		3	1	2				9	12
Atrophy of the liver								1	1
Hypertrophy of the liver		1		1				4	5
Jaundice		1	1					2	3
Inflammation of hepatic ducts and gall bladder		6	6					4	10
Calculi								6	6
Accumulation of bile								6	6
DISEASES OF THE LYMPHATIC SYSTEM	2	53	38	13			4	87	142
Hypertrophy of spleen								3	3
Inflammation of lymph glands	2	39	32	8			1	70	111
Suppuration		14	6	5			3	6	20
Hypertrophy of lymph glands								6	6
Inflammation of lymphatics								2	2
DISEASES OF THE THYROID BODY								3	3
Inflammation								1	1
Goitre								2	2
DISEASES OF THE URINARY SYSTEM	3	39	14	24		4		146	188
Acute nephritis	1	6	4	2		1		6	13
Bright's disease		11		9		2		10	21
Chronic nephritis		5	2	3				5	10
Congestion of kidney								2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE URINARY SYSTEM—Continued.									
Nephralgia								1	1
Calculus in ureter		1	1					1	2
Hæmaturia								1	1
Albuminuria								3	3
Lithuria								6	6
Oxaluria								1	1
Inflammation of bladder—									
Acute	1	11	5	6		1		78	90
Subacute	1		1					1	2
Chronic		4		4				11	15
Calculus of bladder		1	1					3	4
Ileo-vesicular fistula								1	1
Irritability of bladder								4	4
Retention of urine								4	4
Incontinence of urine								8	8
DISEASES OF THE GENERATIVE SYSTEM	4	157	116	37	3		5	563	724
Urethritis								5	5
Gleet								12	12
Hemorrhage of the urethra								4	4
Stricture of urethra—organic	2	30	20	11			1	79	111
Urethral fistula		1		1					1
Inflammation of the prostate—chronic								2	2
Prostatorrhœa								3	3
Hypertrophy of the prostate		5		5				15	20
Posthitis		1					1	2	3
Phimosis		16	14	2				8	24
Inflammation of the penis—of the glans								9	9
Ulcer of penis		5	3	1			1	26	31
Soft chancre		43	34	8			1	285	328
Abscess of the scrotum								2	2
Pruritus of the scrotum								2	2
Varicocele	1	10	7	2	1		1	26	37
Hydrocele of tunica vaginalis		9	9					16	25
Inflammation of the testicle—									
Acute orchitis	1	26	22	4	1			24	51
Chronic orchitis								2	2
Epididymitis		7	4	2	1			3	10
Spermatorrhea								10	10
Impotence								12	12
Inflammation of the ovary								1	1
Inflammation of the uterus		1		1				2	3
Laceration cervix uteri		1	1						1
Prolapse of the vagina								1	1
Dysmenorrhea		1	1					4	5
Metrorrhagia								4	4
Leucorrhœa								3	3
Induration corpora cavernosa		1	1					1	2
DISEASES OF THE ORGANS OF LOCOMOTION	1	49	33	15			2	270	320
Inflammation of the bones—									
Osteitis								2	2
Periostitis		3	2	1				6	9
Necrosis		4	2	2				1	5
Hypertrophy of the bones		1		1					1
Inflammation of joints—									
Acute synovitis		4	3				1	9	13
Chronic synovitis	1	5	1	5					6
Ankylosis		3	1	2					3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Loose body in joint		1		1				1	2
Atrophy of muscles								1	1
Psoas, lumbar, and other abscesses		2	1	1				2	4
Inflammation of muscles								1	1
Idiopathic muscular atrophy								1	1
Myalgia		16	15				1	208	224
Lumbago		3	3					21	24
Inflammation of tendons		1	1					2	3
Of sheaths								3	3
Thecal abscess		2	1	1				4	6
Ganglion								2	2
Inflammation of bursæ—acute		2	2					4	6
Bunion		1		1				1	2
Bursal cyst		1	1					1	2
DISEASES OF THE CONNECTIVE TISSUE	5	63	54	10	1		3	183	251
Inflammation	2	7	6	1			2	67	76
Abscess	3	56	48	9	1		1	113	172
Œdema								3	3
DISEASES OF THE SKIN	3	64	48	15			4	490	557
Erythema		1	1					11	12
Urticaria		1	1					23	24
Prickly heat		1	1					10	11
Eczema	1	5	4	2				123	129
Impetigo		3	3					11	14
Pityriasis rubra								3	3
Psoriasis		1		1				22	23
Sudomina		1	1					2	3
Chloasma								3	3
Zona		2	1	1				6	8
Dermatitis herpetiformis		5	5					3	8
Acne								18	18
Sycosis								8	8
Seborrhœa		1	1					1	2
Herpes								36	36
Chilblain		1	1					1	2
Ulcer	2	26	17	8			3	79	107
Boil		11	9	2				90	101
Carbuncle		1		1				6	7
Whitlow		4	3				1	15	19
Onychia								5	5
Corn								4	4
Wen								2	2
Pruritus								8	8
Injuries	**32**	**437**	**288**	**142**	**3**	**4**	**32**	**903**	**1,372**
GENERAL INJURIES	1	50	40	9			2	80	131
Effects of heat—									
Burns and scalds		24	20	4				68	92
Heat stroke	1	23	19	3			2		24
Sunstroke								12	12
Multiple injury		3	1	2					3
LOCAL INJURIES	31	387	248	133	3	4	30	823	1,241
Contusion of muscles		2	1	1				3	5
Strain of muscles								10	10
Rupture of muscles		2	1	1					2
Strain of tendons								1	1
Contusion of skin								2	2
Abrasion of skin		1		1				2	3

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Wound of skin								5	5
Burn or scald of skin		6	4				2	3	9
Frostbite		2	2					1	3
Burn or scald of mucous membrane		2		2					2
Effects on the mucous membrane of irritants or corrosives								1	1
Contusion of scalp		3	2	1					3
Wound of scalp		18	12	6				30	48
With injury to the aponeurosis		3	3					7	10
With injury to the pericranium								1	1
Contusion of skull		1		1				2	3
Fracture of the vault of skull		2	1	1					2
Fracture of the base of skull		3	1			2			3
Concussion of brain	1	2	3					1	4
Contusion of face		2	2					7	9
Wound of face and mouth		4	2	2				19	23
Foreign bodies in the nose, antrum, or other cavities								1	1
Fracture of facial bones		2		1	1			6	8
Contusion of eyelid		1	1					4	5
Hemorrhage, subconjunctival								1	1
Wound of conjunctiva		1		1				1	2
Contusion of eyeball		1		1					1
Foreign bodies in the conjunctiva or cornea								25	25
Foreign bodies in eyeball								4	4
Wound of eyeball								1	1
Contusion of pinna								1	1
Wound of pinna		1	1					1	2
Foreign body in external meatus								2	2
Contusion of neck								1	1
Fracture cartilage of larynx		1		1					1
Wound of neck		1		1				1	2
Contusion of chest		8	5	3				22	30
Dislocation of costal cartilages								2	2
Fracture of ribs	3	14	12	5				24	41
Wound of parietes of chest		1	1						1
Penetrating wound of pleura or lung		1	1						1
Contusion of back	1	18	12	6			1	29	48
Sprain of back		6	4	1			1	38	44
Fracture of spine	1					1			1
Contusion of abdomen		1	1					2	3
Wound of parietes of abdomen		1		1				4	5
Wound of the male urethra, perinaeum, scrotum, testis, or penis		2	2					1	3
Wound of rectum		1	1					4	5
Fracture or dislocation of pelvic bones		3	1	2					3
Compression spinal cord		1				1			1
Contusion of testicle		2	1	1				2	4
Contusion of upper extremities	2	24	20	5			1	62	88
Sprain of shoulder		1		1				12	13
Sprain of elbow								3	3
Sprain of wrist		4	1	3				39	43
Sprain of hand								2	2
Sprain of thumb								4	4
Wound of upper extremities	2	30	16	12	1		3	203	235
Fracture of clavicle	1	6	6	1				1	8
Fracture of scapula		2	1				1		2
Fracture of humerus		5	3	1			1	1	6
Fracture of bones of forearm—									
Radius		4	1	1			2	1	5
Ulna		4	2	2					4
Both bones		7	3	4				2	9

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

GREAT LAKES—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
LOCAL INJURIES—Continued.									
Fracture of carpus, metacarpus, or phalanges	1	1	1		1			10	12
Dislocation of clavicle								1	1
Dislocation of humerus		7	3	3			1	5	12
Dislocation of radius and ulna		1	1						1
Dislocation of phalanges of fingers		4	2	2				1	5
Contusion of lower extremities	6	46	33	17			2	73	125
Sprain of hip								1	1
Sprain of knee		7	4	3				14	21
Sprain of ankle	3	37	24	15			1	47	87
Sprain of foot	1		1						1
Wound of lower extremities	3	38	25	11			5	59	100
Fracture of femur	1	1	1	1					2
Fracture of patella		1	1						1
Fracture of tibia		7	3	3	1		1	2	9
Fracture of fibula		6	2	1			3	1	7
Fracture of tibia and fibula	4	14	10	4			4	3	21
Fracture of bones of foot		3	1	2					3
Of the tarsus		1	1						1
Of the metatarsus	1	5	4	1			1	1	7
Of the phlanges of the toes		1	1						1
Dislocation of femur								1	1
Dislocation of metatarsus and phalanges								2	2

PACIFIC.

TOTAL CASES	149	1,946	930	815	71	76	203	5,223	7,318
General Diseases	74	695	281	303	28	44	113	1,901	2,670
Smallpox								3	3
Cowpox								14	14
Measles		12	12					1	13
Rubella		1	1					1	2
Influenza		38	30	8				144	182
Mumps		16	16					18	34
Diphtheria		1				1			1
Cerebro-spinal fever		3	1	1		1		1	4
Simple continued fever								1	1
Enteric fever	2	37	33	2		1	3	10	49
Choleraic diarrhea		1	1					4	5
Epidemic diarrhea		2		1	1				2
Dysentery		12	9	3				10	22
Malarial fever:									
Intermittent	1	21	14	7			1	32	54
Remittent		12	8	3		1		5	17
Erysipelas		15	12	1		1	1	2	17
Pyæmia		3		3				7	10
Septicæmia	1		1						1
Tubercle	54	178	14	94	10	29	85	47	279
Syphilis:									
Primary		4		4				59	63
Secondary	4	69	3	59	5	3	3	377	450
Gonorrhea	6	110	48	57	5		6	659	775
Diseases dependent on animal parasites:									
Tænia mediocanellata								1	1
Phthirius inguinalis								5	5
Sarcoptes scabiei								8	8
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans		1	1					8	9

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

PACIFIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Effects of animal poisons—fish	......	......	......	......	......	......	......	14	14
Effects of vegetable poisons—copaiba	......	......	......	......	......	......	......	2	2
Effects of the presence of foreign bodies	......	2	1	......	1	......	......	7	9
Effects of mechanical injuries	......	1	......	1	......	......	......	......	1
Effects of chemical agents	......	2	1	1	......	......	......	1	3
Scurvy	......	3	......	2	......	1	......	4	7
Alcoholism	1	18	10	5	2	2	......	44	63
Rheumatic fever	3	25	17	10	......	1	......	7	35
Rheumatism	1	94	46	34	1	1	13	347	442
Osteoarthritis	1	2	......	2	......	......	1	3	6
Cyst—mucous	......	......	......	......	......	......	......	2	2
New growth, nonmalignant:									
Lipoma	......	3	......	1	2	......	......	6	9
Condyloma	......	......	......	......	......	......	......	1	1
Papilloma	......	1	......	1	......	......	......	6	7
Pterygium	......	......	......	......	......	......	......	1	1
New growth, malignant—carcinoma	......	1	......	......	......	1	......	1	2
Anæmia	......	......	......	......	......	......	......	3	3
Chlorosis	......	......	......	......	......	......	......	2	2
Leucocythæmia	......	1	......	......	......	1	......	1	1
Diabetes mellitus	......	......	......	......	......	......	......	......	1
Congenital malformations	......	......	......	......	......	......	......	1	1
Debility	......	6	2	3	1	......	......	31	37
Local Diseases	**59**	**823**	**388**	**369**	**34**	**28**	**63**	**2,473**	**3,355**
DISEASES OF THE NERVOUS SYSTEM	12	42	8	29	6	5	6	121	175
Of the nerves—									
Inflammation—neuritis	1	10	2	9	......	......	......	15	26
Of the spinal cord and membranes—cord—									
Degeneration—									
Of anterior cornua	1	......	......	......	1	......	......	......	1
Of lateral columns	1	......	......	1	......	......	......	......	1
Of posterior columns	2	2	......	......	......	1	3	3	7
Of the brain and its membranes—membranes—									
Hemorrhage	......	1	......	1	......	......	......	......	1
Of the brain and its membranes—brain—									
Sclerosis	1	1	......	2	......	......	......	......	2
Hemorrhage	......	7	......	2	1	2	2	......	7
Functional nervous disorders with other diseases of undetermined nature—									
Paralysis—									
Hemiplegia	1	......	......	1	......	......	......	1	2
Local paralysis	......	1	......	1	......	......	......	4	5
Incomplete paralysis	1	......	......	......	......	......	1	......	1
Spasm	......	......	......	......	......	......	......	1	1
Torticollis	......	......	......	......	......	......	......	2	2
Epilepsy	......	2	......	2	......	......	......	2	4
Vertigo	......	1	1	......	......	......	......	......	1
Headache	......	......	......	......	......	......	......	8	8
Anæsthesia	......	......	......	......	......	......	......	1	1
Neuralgia	2	11	3	5	4	1	......	61	74
Hysteria	......	......	......	......	......	......	......	3	3
Nervous weakness	......	3	1	2	......	......	......	15	18
Aphasia	1	......	1	......	......	......	......	......	1
Mental diseases—									
Mania, acute	......	1	......	......	......	1	......	2	3
Melancholia	1	2	......	3	......	......	......	3	6

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

PACIFIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE EYE	2	21	8	8	5	1	1	53	76
Conjunctivitis		6	4	2				31	37
Keratitis								1	1
Ulceration of cornea		4	1	2	1			2	6
Opacity of cornea		1		1				2	3
Iritis		4	3	1				6	10
Œdema of conjuctiva								1	1
Atrophy and degeneration of optic nerve or papilla	2	1		1		1	1		3
Lenticular cataract		3			3				3
Glaucoma								1	1
Shrunken eyeball		1		1					1
Hyalitis		1			1				1
Congenital color blindness								1	1
Ametropia								1	1
Abscess lachrymal sac								2	2
Sty								4	4
Abscess of eyelid								1	1
DISEASES OF THE EAR		8	1	6			1	51	59
Inflammation of the external meatus—acute								6	6
Accumulation in external meatus of wax or epidermis		1	1						1
Inflammation of the middle ear		2		2				21	23
Nonsuppurative		1		1				13	14
Suppurative		4		3			1	3	7
Perforation of membrana tympani								6	6
Obstruction of Eustachian tube								1	1
Deafness								1	1
DISEASES OF THE NOSE		2		2				38	40
Inflammation of soft parts		2		2				36	38
Deviation nasal septum								2	2
Diseases of septum	1	1	2					3	5
Epistaxis								3	3
Inflammation of the accessory sinuses	1		1						1
Hypertrophy pharyngeal tonsils		1	1						1
DISEASES OF THE CIRCULATORY SYSTEM	2	55	8	36	1	6	6	59	116
Endocarditis		1	1						1
Valvular disease—									
Aortic		9		6		3		3	12
Mitral		9		5		2	2	13	22
Aortic and mitral		1		1				2	3
Degeneration of heart—fatty		1				1		1	2
Hypertrophy of heart		1		1					1
Dilatation of heart		1		1					1
Angina pectoris								1	1
Disordered action of the heart—									
Abnormal rapidity								4	4
Irregularity		2		2				21	23
Arteritis—									
Endarteritis		3		2			1		3
Degeneration of arteries								1	1
Aneurysm of arteries								1	1
Phlebitis		3	2	1				1	4
Varix	2	24	5	17	1		3	10	36
Capillary nævus								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

PACIFIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE RESPIRATORY SYSTEM	8	153	75	67	1	10	8	458	619
Inflammation of mucous membrane of larynx—									
Catarrhal, acute		4	2	2				18	22
Catarrhal, chronic		1		1					1
Tracheitis, catarrhal		1		1					1
Spasm larynx								1	1
Bronchitis—									
Catarrhal, acute	3	47	26	23	1			310	360
Catarrhal, chronic	1	13	2	11			1	44	58
Spasmodic asthma	1	3	1	3				17	21
Hemorrhage of lung								1	1
Hemoptysis								2	2
Pneumonia		33	20	3		6	4	7	40
Broncho-pneumonia		2		1		1		1	3
Phthisis—									
Acute		40	22	17			1		40
Chronic		2		2					2
Tubercular		1		1					1
Pneumothorax		1				1			1
Colliers phthisis		1		1				1	2
Pleurisy—									
Acute	2	1	1			1	1	19	22
Chronic		3	1	1		1		4	7
Empyema	1						1		1
Adhesions of pleura								33	33
DISEASES OF THE DIGESTIVE SYSTEM	9	150	79	56	14	3	7	647	806
Inflammation of the mouth								4	4
Ulceration of the mouth		2		2				3	5
Caries of dentine and cementum								19	19
Abscess of dental periosteum		1					1	2	3
Inflammation of gums and alveoli		1	1					2	3
Toothache								5	5
Sore throat		2	1			1		70	72
Inflammation of the tonsils—									
Follicular	1	23	18	4	1		1	62	86
Suppuration		8	5	3					8
Hypertrophy of tonsils		2	1	1				4	6
Elongated uvula		1		1				1	2
Inflammation of salivary glands		1	1						1
Salivation								1	1
Inflammation of the pharynx—catarrhal								15	15
Ulceration of pharynx		1	1						1
Inflammation of the stomach—catarrhal	2	21	8	14	1			36	59
Ulceration of the stomach—superficial		1	1						1
Indigestion	1	5	3	3				126	132
Vomiting								1	1
Gastralgia								3	3
Heartburn								3	3
Inflammation of the intestines—									
Enteritis		3	1	2				4	7
Typhlitis	1	5	4		1	1		2	8
Colitis								1	1
Catarrhal		3		3				23	26
Ulceration of the intestines		1					1		1
Fecal accumulation								1	1
Hernia		25	13	3	7		2	75	100
Stricture of the rectum		1				1			1
Obstruction of the intestines		1	1						1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

PACIFIC—Continued.

District.	Number of cases..								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Intestinal dyspepsia		1	1					5	6
Constipation		2	1	1				84	86
Colic								3	3
Diarrhea		5	5					40	45
Ulceration of the anus								1	1
Inflammation of the rectum		2	2					1	3
Periproctitis—abscess	1	5	3	3				2	8
Fissure of the anus		3		3				3	6
Fistula in ano		3	1	1	1			2	5
Piles—									
Internal								5	5
External	1	4	2	1	1		1	15	20
Mixed		4	2	2				4	8
Pruritus ani								2	2
Inflammation of the liver—acute		3		2			1	3	6
Hyperæmia of the liver	1	3	2	2					4
Jaundice		3		2	1			3	6
Inflammation of hepatic ducts and gall bladder		2	1	1				3	5
Calculi		2		1	1				2
Accumulation of bile	1			1				4	5
Biliary colic								4	4
DISEASES OF THE LYMPHATIC SYSTEM	2	35	20	14	1		2	74	111
Inflammation of lymph glands		21	11	8			2	63	84
Suppuration	2	14	9	6	1			11	27
DISEASES OF THE URINARY SYSTEM	1	34	10	21		2	2	45	80
Acute nephritis		3	2	1				2	5
Bright's disease	1	12		11		2		10	23
Chronic nephritis								1	1
Granular kidney								3	3
Abscess—									
Of kidney								1	1
Pyonephrosis		1	1						1
Congestion of kidney								1	1
Pyelitis		1					1		1
Calculus in ureter								1	1
Nephralgia		1	1					2	3
Suppression of urine								2	2
Inflammation of bladder—									
Acute		13	6	7				21	34
Subacute		1					1		1
Retention of urine								1	1
Incontinence of urine		2		2					2
DISEASES OF THE GENERATIVE SYSTEM	3	122	70	44			11	375	500
Urethritis								5	5
Gleet								2	2
Stricture of urethra—organic		17	8	8			1	35	52
Urethral fistula		1	1					1	2
Extravasation of urine	1		1						1
Inflammation of the prostate—acute								1	1
Hypertrophy of the prostate		3		3				1	4
Phimosis		7	6	1				1	8
Paraphimosis		3	2	1				2	5
Inflammation of the penis—of the glans								8	8
Ulcer of penis		1	1					29	30
Soft chancre	1	61	31	24			7	222	284
Abscess of the scrotum		2	1	1				1	3
Sloughing of scrotum		2	2						2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

PACIFIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE GENERATIVE SYSTEM—Continued.									
Pruritus of the scrotum								1	1
Hydrocele of the spermatic cord	1		1						1
Varicocele		6	3	2			1	20	26
Hydrocele of tunica vaginalis		6	4	1			1	8	14
Inflammation of the testicle—									
Acute orchitis		9	7	2				26	35
Chronic orchitis		1					1		1
Epididymitis		2	2					4	6
Abscess of testicle		1		1					1
Spermatorrhea								7	7
Impotence								1	1
DISEASES OF THE ORGANS OF LOCOMOTION	7	42	15	28	2		4	119	168
Inflammation of the bones—									
Osteitis		1	1					2	3
Periostitis		1		1					1
Caries		1	1					2	3
Necrosis	2	4	2	4				4	10
Acromegaly		1					1		1
Inflammation of joints—									
Acute synovitis	2	5	2	4			1	11	18
Chronic synovitis		3		2	1				3
Anchylosis	1	1		1			1	10	12
Relaxation of ligaments								1	1
Posterior curvature of spine, angular	1						1		1
Myalgia		13	5	8				54	67
Lumbago		3	2	1				25	28
Adhesion of tendons		1		1					1
Contraction of tendons		1		1				1	2
Inflammation of sheaths of tendons								1	1
Thecal abscess		1		1					1
Inflammation of bursæ—									
Acute		4	2	2				1	5
Chronic	1			1					1
Abscess of bursæ		1		1				1	2
Bunion		1			1			2	3
Flat foot								4	4
DISEASES OF THE CONNECTIVE TISSUE	6	68	39	25	2	1	7	79	153
Inflammation	1	16	10	5			2	31	48
Abscess	5	50	28	20	2	1	4	48	103
Gangrene		1	1						1
Œdema		1					1		1
DISEASES OF THE SKIN	6	90	53	33	2		8	351	447
Erythema		2	2					5	7
Pityriasis rosea								1	1
Urticaria		1					1	7	8
Prickly heat								2	2
Eczema	1	10	8	2			1	68	79
Impetigo								2	2
Prurigo								3	3
Psoriasis		2	1	1				6	8
Herpes		1	1					7	8
Zona		3	2				1	4	7
Pemphigus								3	3
Acne		1	1					18	19
Sycosis		1		1				4	5
Seborrhea								1	1
Melasma								1	1

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued

PACIFIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
DISEASES OF THE SKIN—Continued.									
Chilblain								2	2
Ulcer	5	35	18	17			5	80	120
Cicatrices		2	1		1				2
Boil		15	10	4	1			86	101
Carbuncle		7	4	3				14	21
Whitlow		2	1	1				20	22
Onychia		4	1	3				4	8
Tylosis		3	2	1				3	6
Corn								4	4
Wen		1	1					2	3
Pruritis								3	3
Lupus								1	1
Injuries	**16**	**428**	**261**	**143**	**9**	**4**	**27**	**849**	**1,293**
GENERAL INJURIES		16	10	5		1		37	53
Effects of heat—									
Burns and scalds		8	4	4				30	38
Heat stroke		1	1					1	2
Effects of cold		1	1						1
Effects of chemical irritants and corrosives								2	2
Multiple injury		6	4	1		1		4	10
LOCAL INJURIES	16	412	251	138	9	3	27	812	1,240
Contusion of nerves		1					1		1
Rupture of arteries		1	1						1
Strain of muscles		1	1					2	3
Rupture of muscles		1		1					1
Strain of tendons								1	1
Wound of tendons		1		1				1	2
Contusion of skin		1		1					1
Wound of skin		1	1					2	3
Burn or scald of skin		1		1					1
Frostbite		4	3	1				1	5
Contusion of scalp								1	1
Wound of scalp		11	5	6				44	55
With injury to the aponeurosis		2	1	1				1	3
Contusion of skull								1	1
Fracture of the vault of skull		5	3	2					5
Fracture of the base of skull		3	1			2			3
Concussion of brain		5	2	3				1	6
Contusion of face		2	1	1				9	11
Wound of face and mouth		8	5	3				25	33
Fracture of facial bones	2	7	5	4				4	13
Contusion of eyelid		1	1					3	4
Wound of eyelid								10	10
Contusion of eyeball								2	2
Foreign bodies in the conjunctiva or cornea								8	8
Wound of eyeball		1	1					2	3
Contusion of pinna		1	1					1	2
Fracture cartilages, larynx		1		1					1
Wound of neck		1	1					1	2
Foreign body in the food passages								1	1
Contusion of chest		9	6	2			1	21	30
Fracture of ribs	1	15	10	6				12	28
Fracture of sternum		1	1						1
Wound of parieties of chest		1	1					2	3
Contusion of back		17	13	2	1		1	21	38
Sprain of back		6	4	1	1			42	48
Wound of back		2	1	1				3	5
Contusion of abdomen		3	2		1			3	6

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

PACIFIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.				Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
LOCAL INJURIES—Continued.									
Wound of parietes of abdomen		1	1					2	3
Contusion of the pelvis		2	1	1					2
Contusion of the perineum, scrotum, or penis		2	2					1	3
Wound of the male urethra, perineum, scrotum, testis, or penis		1	1					7	8
Wound of rectum		1		1					1
Gunshot wound	1		1						1
Contusion of testicle								1	1
Contusion of upper extremities		22	14	8				60	82
Sprain of shoulder	1	5	4	2				21	27
Sprain of elbow		3	2	1				3	6
Sprain of wrist		4	2	2				25	29
Sprain of hand								3	3
Sprain of thumb								5	5
Sprain of fingers								6	6
Wound of upper extremities		57	31	18	1		7	197	254
Fracture of clavicle		6	4		1		1	3	9
Fracture of humerus		3	1	1			1		3
Fracture of bones of forearm—									
Radius		2	2	1				4	6
Ulna		2		2				2	4
Both bones		3	3					1	4
Fracture of carpus, metacarpus, or phalanges		1	1					15	16
Dislocation of clavicle								2	2
Dislocation of humerus		3	2	1				4	7
Dislocation of phalanges of thumb								1	1
Dislocation of phalanges of fingers		1		1				2	3
Dislocation of carpus								2	2
Contusion of lower extremities	1	44	24	20	1			51	96
Sprain of hip								5	5
Sprain of knee		15	7	7			1	23	38
Sprain of ankle		29	18	9	1		1	36	65
Sprain of foot		1	1					4	5
Wound of lower extremities	2	36	21	14			3	86	124
Wound of joint, lower extremities		1					1		1
Rupture of bursæ		2		2					2
Fracture of femur	1	6	4				3		7
Fracture of cervix femoris	1	2		1	1		1		3
Fracture of patella		3	2	1				1	4
Fracture of tibia	4	14	14	1		1	2	5	23
Fracture of fibula	2	6	7				1	1	9
Fracture of tibia and fibula		8	5	2			1	4	12
Fracture of bones of foot		3	2				1	1	4
Of the metatarsus		1		1				2	3
Of the phalanges of the toes		5	2	3				1	6
Dislocation of tibia		2	1	1					2
Malingering		1			1				1

QUARANTINE.

TOTAL CASES	3	44	38	3	2	3	1	23	70
General Diseases	2	32	31		2		1	11	45
Smallpox	2	18	19				1		20
Influenza								1	1
Enteric fever								2	2

TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1901—Continued.

PACIFIC—Continued.

District.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at close of year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Yellow fever		3	3						3
Malarial fever:									
Intermittent		8	8					3	11
Remittent		1	1					2	3
Leprosy		1			1				1
Syphilis—secondary		1			1				1
Gonorrhea								2	2
Rheumatism								1	1
Local Diseases	1	4	2	1		2		8	13
DISEASES OF THE CIRCULATORY SYSTEM		2				2			2
Degeneration of heart—fatty		2				2			2
DISEASES OF THE RESPIRATORY SYSTEM								3	3
Bronchitis—catarrhal, acute								2	2
Pleurisy—acute								1	1
DISEASES OF THE DIGESTIVE SYSTEM								3	3
Inflammation of the tonsils—suppuration								1	1
Inflammation of the pharynx—catarrhal								1	1
Colic								1	1
DISEASES OF THE LYMPHATIC SYSTEM	1		1						1
Inflammation of lymph glands	1		1						1
DISEASES OF THE GENERATIVE SYSTEM		1	1					1	2
Ulcer of penis								1	1
Inflammation of the testicle—epididymitis		1	1						1
DISEASES OF THE CONNECTIVE TISSUE								1	1
Abscess								1	1
DISEASES OF THE SKIN		1		1					1
Urticaria		1		1					1
Injuries		8	5	2		1		4	12
GENERAL INJURIES:									
Effects of heat		6	5			1			6
Multiple injury		1				1			1
Exhaustion		5	5						5
LOCAL INJURIES		2		2				4	6
Burn or scald of skin		1		1					1
Sprain of wrist								1	1
Fracture of scapula		1		1					1
Fracture of bones of forearm—radius								1	1
Contusion of lower extremities								1	1
Wound of lower extremities								1	1

TABLE VIII.—TABULATED STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1901.

Causes of death.	Total.	Districts.								
		North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Total deaths from all causes	**421**	**33**	**63**	**61**	**43**	**25**	**48**	**69**	**76**	**3**
FROM DISEASES	397	32	63	57	41	22	43	65	72	2
FROM INJURIES	24	1		4	2	3	5	4	4	1
General Diseases	**192**	**14**	**29**	**25**	**14**	**8**	**22**	**36**	**44**	
Smallpox	1			1						
Measles	1			1						
Influenza	2						1	1		
Mumps	1			1						
Diphtheria	1								1	
Cerebro-spinal fever	1								1	
Enteric fever	27	2	2	4		1	2	15	1	
Choleraic diarrhea	1	1								
Dysentery	2				2					
Beriberi	1	1								
Malarial fever:										
Intermittent	2		1		1					
Remittent	6			1	2		2		1	
Erysipelas	2				1				1	
Septicæmia	2			1	1					
Tetanus	1							1		
Tubercle	110	8	22	14	4	7	13	13	29	
Syphilis:										
Primary	2	1	1							
Secondary	7			1	1		1	1	3	
Scurvy	1								1	
Alcoholism	3							1	2	
Rheumatic fever	3		1		1				1	
Rheumatism	2						1		1	
New growth, malignant:										
Sarcoma	2	1	1							
Carcinoma	4				1			2	1	
Carcinoma, glandular	1						1			
Squamous carcinoma	1							1		
Epithelioma	1							1		
Leucocythemia	1								1	
Diabetes mellitus	2		1	1						
Debility	1						1			
Local Diseases	**205**	**18**	**34**	**32**	**27**	**14**	**21**	**29**	**28**	**2**
DISEASES OF THE NERVOUS SYSTEM	37	5	7	9	6		2	3	5	
Neuritis	1			1						
Degeneration spinal column	3		1					1	1	
Inflammation of brain	7	2	2	1	1		1			
Inflammation of dura mater	1	1								
Hemorrhage of brain	6		2	1	1				2	
Hyperemia	2			1				1		
Apoplexy	3	2					1			
Paralysis—										
Paraplegia	3		1	1	1					
Hemiplegia	4			2	1			1		
Local paralysis	1				1					
Incomplete paralysis	1								1	
Epilepsy	2		1		1					
Mania, acute	1								1	
Dementia	1			1						
General paralysis of the insane	1			1						
DISEASES OF THE CIRCULATORY SYSTEM	51	6	5	3	7	7	6	8	7	2
Pericarditis	3					1		1	1	
Endocarditis	3				1			2		
Valvular disease—										
Aortic	15	2	2	2	2	2		2	3	
Mitral	19	3	2	1	1	3	5	2	2	
Fatty degeneration of heart	3								1	2
Dilatation of heart	1							1		
Endarteritis	1				1					
Aneurism of arteries	5	1			2	1	1			
Embolism	1		1							
DISEASES OF THE RESPIRATORY SYSTEM	57	4	9	13	1	6	7	7	10	
Bronchitis—catarrhal, chronic	4		1	3						
Spasmodic asthma	1			1						
Congestion of lung	1					1				

Table VIII.—Tabulated Statement, by Districts, of Causes of Mortality among Patients of the Service during the Year ended June 30, 1901—Continued.

Causes of death.	Total.	Districts.								
		North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
DISEASES OF THE RESPIRATORY SYSTEM—Continued.										
Pneumonia	42	4	6	8	1	5	6	6	6	
Broncho-pneumonia	2		1						1	
Phthisis—										
Acute	1			1						
Chronic	1							1		
Tubercular	1		1							
Pleurisy—										
Acute	2						1		1	
Chronic	1								1	
Pneumothorax	1								1	
DISEASES OF THE DIGESTIVE SYSTEM	28		9		7		2	7	3	
Sore throat	1								1	
Inflammation of stomach—catarrhal	2		1				1			
Inflammation of intestines—										
Typhlitis	7		2		1			3	1	
Colitis	1		1							
Ulceration of intestines	1		1							
Hernia	2		1					1		
Stricture of rectum	1								1	
Obstruction of intestines	1				1					
Diarrhea	1		1							
Fistula in ano	1						1			
Inflammation of liver—										
Acute	5				2			3		
Chronic	1		1							
Inflammation of bladder	2		1		1					
Inflammation of peritoneum	1				1					
Dropsy	1				1					
DISEASES OF THE LYMPHATIC SYSTEM	2	1			1					
Inflammation of lymph glands	2	1			1					
DISEASES OF THE URINARY SYSTEM	24	1	3	5	4	1	4	4	2	
Acute nephritis	1							1		
Bright's disease	7		1	2				2	2	
Chronic nephritis	11		2	2	2	1	4			
Granular kidney	3	1			2					
Inflammation of bladder	2			1				1		
DISEASES OF THE GENERATIVE SYSTEM	2			1	1					
Soft chancre	1				1					
Epididymitis	1			1						
DISEASES OF THE ORGANS OF LOCOMOTION	1	1								
Caries of spine	1	1								
DISEASES OF CONNECTIVE TISSUE	3		1	1					1	
Abscess	1								1	
Gangrene	1			1						
Œdema	1		1							
Injuries	**24**	**1**		**4**	**2**	**3**	**5**	**4**	**4**	**1**
GENERAL INJURIES	6			3		1			1	1
Sunstroke	2			2						
Multiple injury	3			1					1	1
Shock	1					1				
LOCAL INJURIES	18	1		1	2	2	5	4	3	
Burn of skin	1						1			
Burn of mucous membrane	1						1			
Fracture vault of the skull	1						1			
Fracture base of the skull	5					1		2	2	
Concussion of brain	1			1						
Fracture of spine	2						1	1		
Dislocation of spine	1						1			
Concussion of cord	1							1		
Wound parietes of abdomen	1					1				
Wound of male urethra	1	1								
Wound of bladder	1				1					
Wound of upper extremities	1				1					
Fracture of tibia	1								1	

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1901.

Operations.	No. of cases.	Remarks.
Total number of operations	1,385	
OPERATIONS ON TUMORS	40	
Enchondroma	1	Successful—removed inferior maxilla.
Fibroma	1	Successful.
Keloid	1	Do.
Lipoma	8	Successful, 8.
Myxoma	2	Successful, 2.
Papilloma	4	Successful, 4.
Nevus	1	Improved—electrolysis.
Hematoma	1	Successful—incised.
Carcinoma of—		
Cheek	1	Successful.
Lip	2	Successful, 2.
Nose	1	Successful, 1.
Tongue	2	Recovery, 1; died, 1.
Glands of neck	2	Unsuccessful, 2.
Stomach and liver	1	Laparotomy—died.
Penis	3	Successful, 3.
Epithelioma of—		
Lip	3	Do.
Face	1	Successful, 1.
Sarcoma of—		
Neck	2	Unsuccessful, 2.
Chest	2	Successful, 2.
Thigh	1	Recovery, 1.
OPERATIONS ON CYSTS	20	
Bursal cysts	3	Successful, 3.
Dermoid cysts	2	Successful, 2.
Gelatinous cysts	1	Successful, 1.
Sebaceous cysts	14	Successful, 14; excised, 10; incised and curetted, 4.
EVACUATION OF ABSCESSES:		
By free incision and drainage	135	
Abscess of—		
Face	6	Successful, 5; unsuccessful, 1.
Lip	1	Successful, 1.
Tonsil	1	Do.
Neck	12	Successful, 11; still under treatment, 1.
Axilla	4	Successful, 4.
Forearm	5	Successful, 5.
Hand	29	Successful, 29.
Palm	4	Successful, 4.
Finger	13	Successful, 13.
Chest	2	Successful, 2.
Abdominal wall	1	Successful, 1.
Subphrenic	1	Recovery, 1.
Perinephritic	1	Do.
Peritoneal	1	Do.
Psoas	1	Improved, 1.
Lumbar	2	Recovery, 1; died, 1.
Ischiorectal	19	Successful, 18; still under treatment, 1.
Perineum	1	Successful, 1.
Penis	2	Successful, 2.
Prepuce	1	Successful, 1.
Scrotum	3	Successful, 3.
Testicle	1	Successful, 1.
Periurethral	4	Successful, 4.
Gluteal	3	Successful, 3.
Hip	2	Successful, 2.
Thigh	4	Successful, 4.
Knee	1	Successful, 1.
Patellar	2	Successful, 2.
Leg	3	Successful, 3.
Foot	4	Successful, 4.
Toe	1	Successful, 1.
REMOVAL OF FOREIGN BODIES	7	
From—		
Chest	2	Successful, 2; removed bullet, 2.
Ulnar and radius	1	Successful, 1; removed silver wire used in operation to unite bones.
Thigh	2	Recovery, 2; removed bullet, 2.
Knee	2	Recovery, 2; removed bullet, 1; removed loose body, 1.

Table IX.—Surgical Operations, Fiscal Year 1901—Continued.

Operations.	No. of cases.	Remarks.
OPERATION ON ARTERIES	1	
Ligation of femoral	1	Successful—ligated on each side and dissected out aneurysm.
OPERATIONS ON VEINS	31	
Excision of varices of leg	31	Successful, 31.
OPERATIONS ON LYMPHATIC GLANDS	323	
By excision of glands of—		
Axilla	3	Successful, 3.
Neck	6	Successful, 6; for tubercular disease, 6.
Groin	195	Successful, 188; improved, 2; under treatment, 5.
By incision and drainage of glands of—		
Parotid	1	Successful, 1.
Groin	115	Successful, 106; unsuccessful, 3; improved, 1; still under treatment, 5.
By injection in glands of groin	3	Successful, 3; injected with iodiform emulsion.
OPERATIONS ON SKIN AND SUBCUTANEOUS TISSUE	20	
Carbuncle of neck	1	Recovery, 1; crucial incision, 1.
Carbuncle of arm	1	Successful, 1.
Carbuncle of wrist	1	Successful, 1; incised and curetted, 1.
Cellulitis of hand	2	Successful, 2; incised, and curetted, 2.
Scalp wound	1	Successful, 1; wound sutured, 1.
Ulcer of thigh	1	Successful, 1; curetted, 1.
Ulcer of leg	9	Successful, 9; skin grafted, 7; excised, 2.
Burn of foot	1	Successful, 1; Reverden's method skin grafting.
Ingrown toe nail	3	Successful, 3; excision portion of nail, 3.
OPERATIONS ON BONES	114	
Incision of periosteum—		
Finger	1	Successful, 1; periostitis.
Ilium	1	Unsuccessful, 1; tubercular.
Tibia	1	Successful, 1; periostitis.
Osteotomy of tibia	2	Successful, 1; unsuccessful, 1.
Excision of—		
Rib	1	Successful.
Clavicle (part of)	1	Successful, 1.
Humerus (part of)	1	Do.
Olecranon	1	Successful, 1; for necrosis.
Radius (lower end)	1	Successful, 1.
Metacarpal bone	1	Do.
Tibia (part of)	1	Do.
Metatarsal bone	1	Do.
Coccyx	1	Do.
Removal of fragments of bone—		
Curetting of—		
Frontal bone	1	Do.
Inferior maxilla	2	Successful, 2.
Sternum	2	Successful, 1; improved, 1.
Clavicle	1	Successful, 1.
Humerus	2	Successful, 1; unsuccessful, 1.
Carpus	3	Remaining under treatment, 3.
Metacarpus	1	Successful, 1; for necrosis.
Finger	4	Successful, 4; for necrosis, 4.
Femur	2	Successful, 1; improved, 1; tubercular caries.
Tibia	3	Successful, 2; improved, 1.
Tarsus	3	Do.
Toe	1	Successful, 1.
Osteomyelitis	1	Recovery, 1; removed bone down to medulla and packed.
For ununited fracture of—		
Inferior maxilla	2	Successful, 1; unsuccessful, 1.
Humerus	3	Successful, 1; curetted and wired; unsuccessful, 2; freshened ends of bone and nailed ends together, first operation; later in second operation applied bone ferrule.

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1901—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON BONES—Continued.		
For ununited fracture of—Continued.		
Radius and ulna	4	Successful, 1; unsuccessful, 3.
Tibia and fibula	1	Unsuccessful, 1.
Removal of sequestra for necrosis of—		
Frontal bone	1	Successful, 1.
Nose	1	Do.
Superior maxilla	1	Do.
Inferior maxilla	1	Do.
Tibia	4	Successful, 4.
Metatarsal bone	1	Successful, 1.
Removal of exostosis of—		
Femur	1	Successful.
For fracture of—		
Vault of skull	2	Successful, 1; died, 1; removed fragments and closed wound in both cases.
Inferior maxilla	3	Successful, 1; improved, 2.
Ribs	4	Recovery, 4.
Scapula	1	Recovery, 1.
Clavicle	2	Successful, 2.
Humerus	4	Successful, 3; improved, 1.
Radius	5	Recovery, 5.
Ulna	2	Recovery, 2.
Radius and ulna	4	Recovery, 4.
Metacarpal bones	2	Recovery, 2.
Phalanges of hand	4	Recovery, 4.
Femur	5	Recovery, 4; still under treatment, 1.
Patella	3	Recovery, 2; still under treatment, 1; wired, 1; figure of 8 bandage on 2
Tibia	6	Recovery, 6.
Tibia and fibula	4	Recovery, 4.
Tarsal bones	2	Died from tetanus, 1; recovery, 1.
Phalanges of foot	1	Recovery, 1.
OPERATIONS ON JOINTS	41	
Reduction of dislocation of—		
Sterno-clavicular	1	Successful, 1.
Shoulder	17	Successful, 17.
Wrist	2	Successful, 2.
Thumb (last joint)	1	Successful, 1.
Hip	1	Do.
Ankle	2	Successful, 2.
Incision and drainage of—		
Wrist	1	Successful, 1.
Finger	1	Do.
Knee	1	Under treatment.
ASPIRATION OF KNEE	3	Successful, 3.
OPERATION FOR ANKYLOSIS:		
Shoulder	3	Improved, 3.
Elbow	2	Unsuccessful, 2.
Wrist	1	Improved, 1.
Finger	1	Do.
Knee	1	Unsuccessful, 1.
Excision of carpus	2	Successful, 2.
Middle finger (joint of)	1	Successful, 1.
OPERATIONS ON MUSCLES, TENDONS, AND FASCIÆ.	6	
Uniting divided tendons—		
Forearm	1	Successful, 1.
Hand	3	Successful, 3.
Finger	1	Successful, 1.
Foot	1	Do.
AMPUTATIONS	60	
Of hand	1	Recovery, 1.
Phalanges of hand	33	Recovery, 33; for injury, 22; for disease, 8; for frostbite, 2; deformity, 1.
Thigh	2	Recovery, 2; for disease, 1; for injury, 1.
Leg	9	Recovery, 9; for injury, 6; necrosis, 1; tubercular, 1; frostbite, 1.
Foot	1	Recovery, 1; Pirigoff's operation.
Phalanges of foot	14	Recovery, 14.

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1901—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON SKULL AND BRAIN	6	
Trephining	2	Recovery, 2.
Opening of mastoid cells	4	Recovery, 4; suppurative disease, 3; diphtheritic inflammation, 1.
OPERATIONS ON FACE, NASAL CAVITIES, AND MOUTH.	14	
Opening of antrum of Highmore	1	Recovery, 1; antrum opened and drained.
Removal of—		
Uvula	5	Recovery, 5.
Tonsils	8	Recovery, 8; for hypertrophy, 8.
OPERATIONS ON THE EYE AND ITS APPENDAGES	14	
Excision of—		
Eyeball	5	Died, 1, from glaucoma; recovery, 4.
Pterygium	7	Successful, 7.
Extraction of lens	1	Improved, 1, for staphyloma.
Lacrymal obstruction	1	Successful, 1.
OPERATION ON THORAX	28	
Paracentesis	16	Died, 1, from empyema; recovery, 12; for pleuritic effusion, 12; unsuccessful, 3; thoracotomy necessary for empyema.
Thoracotomy	4	Recovery, 4; for empyema, 4.
Murphy's operation	7	Successful, 4; unsuccessful, 3; all for tubercle of lung.
Penetrating gunshot wound of lung	1	Recovered, 1.
OPERATIONS ON THE ABDOMEN	97	
Paracentesis	2	Successful, 1; ascites, 1; died, 1; hobnail liver, 1.
Operation for radical cure of—		
Ventral hernia	2	Successful, 1; unsuccessful, 1.
Inguinal hernia	64	Recovery, 62; died, 1; under treatment, 1; Bassini's method, 38; modified Bassini method, 11; Halstead method, 11; modified Halstead method, 1; Phelps method, 3.
Femoral hernia	1	Successful.
Laparotomy for—		
Abscess of liver	2	Recovery, 2.
Cirrhosis of liver	2	Improved, 2.
Hydatid of liver	1	Recovery.
Sarcoma of liver	1	Died, 1.
Peritonitis	2	Recovery, 2.
Ascites	1	Died, 1.
Appendicitis	17	Successful, 14; died, 3.
Nephrotomy	1	Recovery, 1, for abscess of kidney.
Carcinoma of stomach	1	Died, 1.
OPERATIONS ON RECTUM AND ANUS	88	
Fistula in ano	39	Recovery, 35; improved, 3; died, 1.
Condyloma of anus	1	Recovery, 1.
Removal of polypus of rectum	1	Do.
Prolapse of rectum	1	Recovery, 1; mucus excised.
Ulcer of rectum and anus	2	Recovery, 2; curetted.
Fissure in ano	4	Recovery, 4.
External hemorrhoids	25	Recovery, 25; clamp and cautery, 15; ligature and excision, 10.
Internal hemorrhoids	15	Recovery, 15; clamp and cautery, 9; ligature and excision, 5; injection, 1.
OPERATIONS ON BLADDER AND URETHRA	106	
Suprapubic cystotomy	4	Successful, 2; improved, 1; unsuccessful, 1; 2 for tubercular cystitis, 1 for calculus, 1 for cystitis.
Perineal section	3	Successful, 1, for organic stricture; unsuccessful, 1, for tubercular cystitis; died, 1, from ruptured urethra and extravasation of urine.
Urethral fistula	5	Successful, 4; improved, 1; excised and sutured, 2; curetted and packed, 2; perineal section, 1.

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1901—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON BLADDER AND URETHRA—Con.		
Stricture of urethra	94	Successful, 80; improved, 13; under treatment, 1; internal urethrotomy, 46; external urethrotomy, 12; gradual dilatation, 30; rapid dilatation, 6.
OPERATIONS ON MALE GENERATIVE ORGANS	232	
Phimosis	171	Successful, 171; circumcision, 156; dorsal incision, 14; ventral incision, 1.
Chancroids	5	Successful, 5; circumcision, 3; excision, 1; incision of foreskin, 1.
Hypospadia	2	Successful, 1; unsuccessful, 1; edges pared and sutured in both.
Chancre	3	Successful, 3; circumcision, 2; excision, 1.
Paraphimosis	1	Successful; circumcision.
Resection of epididymis	2	Successful, 2; both for tuberculosis.
Castration	6	Successful, 6; all for tuberculosis.
Varicocele	16	Recovery, 16; open method, 12; closed method, 4.
Hydrocele	24	Successful, 24; tapping and injection, 9; tapped, 9; excision of sac, 6.
Hypertrophy of prostate	2	Successful, 1; improved, 1; cut vas deferens in both cases.
OPERATIONS ON FEMALE GENERATIVE ORGANS	2	
Curettement	1	Recovery; for endometritis.
Hysterectomy	1	Recovery; for carcinoma of uterus.

TABLE X.—RATIO OF DEATHS FROM SPECIFIC CAUSES.

Deaths from—	Per 100 from all causes.	Death from—	Per 100 from all causes.
General diseases	45.60	Diseases of the digestive system	6.65
Diseases of the nervous system	8.78	Diseases of the urinary system	5.70
Diseases of the circulatory system	11.87	Injuries	5.22
Diseases of the respiratory system	13.53	From all other causes	2.61

TABLE XI.—RATIO OF DEATHS IN EACH DISTRICT.

Districts.	Per 100 patients treated in hospital.	Districts.	Per 100 patients treated in hospital.
North Atlantic	2.89	The Mississippi	3.46
Middle Atlantic	3.64	The Great Lakes	2.91
South Atlantic	3.16	The Pacific	3.62
The Gulf	2.87	The quarantine stations	6.38
The Ohio	2.18		

TABLE XII.—COMPARATIVE EXHIBIT—MORTALITY PER 100 PATIENTS TREATED IN HOSPITAL, BY DISTRICTS, 1892–1901.

Districts.	General average.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
North Atlantic	2.80	2.62	2.46	2.36	3.09	2.73	2.95	2.55	3.40	2.96	2.89
Middle Atlantic	3.93	3.44	3.69	4.17	4.56	4.12	3.75	3.92	3.69	4.38	3.64
South Atlantic	3.25	2.71	3.37	4.00	3.56	3.55	2.83	3.49	2.99	2.93	3.16
The Gulf	3.12	3.63	3.29	2.38	2.98	2.90	3.33	2.94	2.78	4.11	2.87
The Ohio	2.80	1.53	3.01	2.51	3.23	3.24	2.78	2.73	3.28	3.58	2.18
The Mississippi	3.28	3.37	3.64	3.99	2.53	3.20	2.92	3.18	3.13	3.46	3.46
The Great Lakes	2.80	4.11	2.76	2.61	2.54	2.26	2.86	2.34	3.26	2.42	2.91
The Pacific	4.05	3.83	3.73	3.76	4.38	4.70	4.40	3.43	4.87	3.78	3.62
The quarantine stations	3.38	......	......	......	......	4.76	4.94	2.68	1.15	12.90	6.38

TABLE XIII.—COMPARATIVE EXHIBIT—RATIO OF DEATHS FROM SPECIFIC CAUSES, 1892–1901.

Deaths from—	General average.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
General diseases	47.31	43.42	47.70	47.70	43.94	50.70	48.99	45.45	55.60	44.02	45.60
Diseases of the—											
Nervous system	5.34	6.05	4.81	5.58	4.81	4.65	5.56	6.56	3.02	3.62	8.78
Circulatory system	9.96	9.60	8.99	5.58	10.76	11.39	9.85	12.86	9.07	9.71	11.87
Respiratory system	13.38	15.85	13.38	16.51	16.24	12.23	10.35	11.29	9.30	15.12	13.53
Digestive system	8.03	7.30	7.11	8.48	10.53	6.51	9.09	7.35	7.67	9.70	6.65
Urinary system	6.17	4.80	6.48	5.35	6.17	3.49	7.07	5.25	8.37	9.03	5.70
Injuries	6.38	7.72	8.99	5.58	3.43	6.28	6.31	8.66	5.35	6.32	5.22
From all other causes	3.42	5.26	2.54	5.57	4.12	4.65	2.78	2.63	1.62	2.48	2.61

TABLE XIV.—COMPARATIVE EXHIBIT—AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT, 1892–1901.

Districts.	General average.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
North Atlantic	29.54	24.37	24.12	26.14	29.97	31.07	26.93	33.11	36.90	31.18	31.62
Middle Atlantic	28.78	26.87	26.29	24.60	34.21	29.68	30.39	29.75	29.37	28.45	28.24
South Atlantic	27.51	26.26	29.23	29.48	29.80	26.83	26.80	29.37	25.73	25.02	26.60
The Gulf	22.22	21.97	22.33	22.13	22.46	22.24	22.41	21.35	21.41	23.15	22.78
The Ohio	23.25	23.81	23.37	22.80	25.18	25.43	22.20	23.83	23.02	21.98	20.88
The Mississippi	19.16	20.59	19.84	21.51	22.92	20.74	19.00	18.57	17.56	15.47	15.42
The Great Lakes	25.69	27.82	27.07	28.32	28.34	28.25	26.27	25.45	24.02	20.24	21.20
The Pacific	36.32	36.92	40.27	43.57	40.66	38.81	36.20	28.41	29.12	31.15	38.17
The quarantine stations	13.71	-------	-------	-------	19.97	10.00	11.69	9.00	10.43	13.72	21.21

TABLE XV.—NATIVITIES OF PATIENTS TREATED IN THE UNITED STATES MARINE HOSPITALS DURING THE FISCAL YEAR ENDED JUNE 30, 1901.

Countries.	Number.	Countries.	Number.
Total	12,571	Iceland	34
		India	7
Africa	10	Ireland	520
Australia	47	Italy	100
Austria	125	Japan	28
Azores Islands	15	Mexico	22
Bahama Islands	27	Netherlands	23
Bavaria	20	Norway	248
Canada	350	Portugal	80
Canary Islands	18	Prince Edward Island	93
Cape Verde Islands	75	Russia	169
China	33	Scotland	220
Denmark	405	South America	160
England	310	Spain	100
Finland	225	Sweden	335
France	83	Switzerland	175
Germany	286	Turkey	15
Greece	27	United States of America	7,712
Holland	125	United States of Colombia	75
Honolulu, Hawaii	35	Wales	45
Hungary	86	West Indies	103

DIVISION OF SANITARY REPORTS AND STATISTICS.

REPORT OF THE DIVISION OF SANITARY REPORTS AND STATISTICS.

By George Tully Vaughan,
Surgeon, U. S. Marine-Hospital Service, in charge.

PUBLIC HEALTH REPORTS.

The Public Health Reports for the calendar year ended December 31, 1900, was so large, containing 3,182 pages, that it was thought best to make two volumes of it, each volume containing the reports for six months. The first six months of the year 1900 were included in the annual report of that year, so that the period of time to be considered extends from July 1, 1900, to June 30, 1901.

UNITED STATES.

The reports from State and municipal health officers have increased a little, but are still far from being complete.

Reports were received from 1,447 cities and towns, aggregating, according to the census of 1900, 20,929,783, with a total of deaths of 347,712, making the average mortality for 1,000 16.61, which is probably a little too small, as the total population given was taken by the census one year later than the number of deaths was reported.

The table for the year 1900 was published in Public Health Reports, October 4, 1901. Reports were received from 1,190 cities and towns of the United States, having, according to the census of 1900, 20,712,608 inhabitants, with a total of deaths from all causes of 361,779, making the average mortality 17.47 per 1,000 inhabitants.

Reports are received weekly from 52 national quarantine and inspection stations, including Cuba and the island possessions, and from most of the 28 State and municipal quarantine stations, some of them still ignoring the request for reports.

A table entitled "Mortality statistics of 1,447 cities and towns of the United States for the year ended December 31, 1899," was published in Public Health Reports No. 19, May 10, 1901. This report is based on data received in response to a circular letter which was sent to every city and town in the United States having a population of 1,000 or more. The appearance of the table was delayed in order to get the figures of the last census report for comparison in estimating the mortality.

The table for the year 1900 is nearly complete, and will probably be published in the near future.

The country is to be congratulated on having escaped yellow fever during the last fiscal year, but as if to offset this good fortune, plague has made its appearance in San Francisco, as shown by the tables given below, which run back previous to the beginning of the fiscal year.

It will be seen from the first table that 22 cases, all fatal, occurred from March 7 to December 7, 1900, and from January 6 to April 4, 1901, 12 cases, all fatal.

PLAGUE.

Plague in the United States as reported to the Surgeon-General United States Marine-Hospital Service.

JUNE 29 TO DECEMBER 28, 1900.

Place.	Date.	Cases.	Deaths.
California:			
San Francisco	Mar. 7 July 6	13	13
Do	Aug. 11	1	1
Do	Aug. 15	1	1
Do	Oct. 5	1	1
Do	Oct. 10	1	1
Do	Oct. 14	1	1
Do	Nov. 1	2	2
Do	Nov. 4	1	1
Do	Dec. 7	1	1
Total for State		22	22

JANUARY 1 TO JUNE 28, 1901.

Place.	Date.	Cases.	Deaths.
California:			
San Francisco	Jan. 6	1	1
Do	Jan. 15	2	2
Do	Feb. 5	1	1
Do	Feb. 6	1	1
Do	Feb. 7	1	1
Do	Feb. 10	1	1
Do	Feb. 11	1	1
Do	Feb. 12	1	1
Do	Mar. 2	1	1
Do	Apr. 1	1	1
Do	Apr. 4	1	1
Total for State		12	12

TUBERCULOSIS.

In order to learn the extent to which sanitary laws and regulations have been applied to the management of tuberculosis, the following letter was sent to health officers of the different States and Territories:

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL, U. S. M. H. S.,
Washington, D. C., February 21, 1901.

SIR: Please inform this Bureau if there is any State or municipal law or regulation in your State requiring the registration or notification of cases of tuberculosis.

Respectfully,

WALTER WYMAN,
Surgeon-General, U. S. M. H. S.

STATE HEALTH OFFICER.

Of the 51 States and Territories no reply was received from 13; and of the 38 who replied only 7 reported having laws bearing on the subject.

SMALLPOX.

During the year smallpox has occurred in every State and Territory in the Union with the exception of Arizona, from which no reports have been received.

The number of cases reported for the six months ended December 31, 1900, was 7,805, with 137 deaths, a mortality of 1.75+ per cent.

For the six months ended June 30, 1901, 30,710 cases were reported, with 552 deaths, a mortality of 1.79+ per cent.

For the whole year the number of cases was 38,506 and deaths 689, mortality 1.77 per cent, as compared with 15,053 cases and 735 deaths during the year ended June 30, 1900, a mortality of 4.8 per cent.

Thus it is seen that while more than twice as many cases have been reported during the year just ended, the mortality has been less than half what it was in the preceding year. This is probably to be explained by the fact that cases as well as deaths were more fully reported during the year just ended, while in the preceding year, although most of the deaths from smallpox were reported, there is no doubt that a great many cases of the disease, for various reasons, were not reported. According to this explanation the lower figures, 1.77, are nearer the correct mortality, and even this may be a little excessive, as deaths are more apt to be reported than cases.

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900.

Places.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Mobile	Sept. 13	1		
Alaska:				
Cape Nome	June 14–Oct. 7	24	1	
White Horse	Nov. 24	1		
Skagway	do	1		
Total for Territory		26	1	
California:				
Oakland	July 8–July 14	2		
	Nov. 25–Dec. 1	4		
Total for State		6		
Colorado:				
Arapahoe County	June 13–Nov. 12	72		
Boulder County	June 16	1		
Chaffee County	Oct. 26–Oct. 27	2		
Cheyenne County	Oct. 26	1		
Clear Creek County	July 2–Aug. 8	7		
Costilla County	Oct. 15–Oct. 25	2		
Custer County	Oct. 5	1		
Eagle County	June 25–July 30	3		
Elbert County	Oct. 19	1		
El Paso County	June 21–Aug. 10	5		
Fremont County	Sept. 3–Sept. 23	6		
Garfield County	July 23–Sept. 12	25		
Gilpin County	Aug. 23	1		
Huerfano County	July 31–Oct. 22	12		
Jefferson County	July 27–Sept. 4	13		
Lake County	July 31–Aug. 23	1		
Larimer County	Apr. 25–Oct. 1	82		
Las Animas County	July 5–Oct. 2	23		
Logan County	Oct. 27	2		
Mesa County	July 1–Aug. 31	10		
Otero County	Aug. 4–Sept. 18	5		
Ouray County	Oct. 9–Nov. 4	18		
Park County	July 3	2		
Pueblo County	July 7–Oct. 31	66		
Rio Grande County	Sept. 25–Oct. 31	6		
Routt County	June 25–July 30	2		
Saguache County	Oct. 14	1		
Weld County	Sept. 1–Sept. 30	2		
Total for State		372		
Delaware:				
Wilmington	July 1–July 7	1		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
District of Columbia:				
Washington	June 18-July 23	24		
	Oct. 28-Dec. 13	9		
Total for District of Columbia		33		
Florida:				
Jacksonville	July 1-July 7	1		
Madison County	Sept. 19	30		
Total for State		31		
Georgia:				
Houston County	Dec. 1-Dec. 7	24	1	
Illinois:				
Cairo	Nov. 18, 1899-July 21, 1900.	117	6	
	Nov. 27	1		
Chicago	June 24-July 11	1		
	Dec. 2-Dec. 15	3		
Total for State		125	6	
Indiana:				
Allen County	Nov. 28	7	1	
Cass County	Sept. 1-Oct. 31	8	1	
Clark County	June 1-June 30	3		
Clay County	do	1	1	
Clinton County	do	2		
Delaware County	Sept. 1-Sept. 30	11		
Evansville	July 1-July 7	1		
Frankton	July 1-July 31	1	1	
Gibson County	June 1-July 31	2		
Grant County	Oct. 1-Oct. 31	1		
Green County	June 1-July 31	11		
Jackson County	Aug. 21-Nov. 3	2		
Jasper County	Sept. 1-Sept. 30	11		
Jay County	do	3		
Jennings County	Sept. 1-Nov. 18	2	1	
Johnson County	June 1-July 31	1		
Keystone	July 1-July 31	1		
Kirklin	do	2		
Knox County	Oct. 1-Oct. 31	1		
Hammond	July 1-July 31	1		
Lawrence County	June 1-July 31	9		
Loogootee	July 1-July 31	2	2	
Madison County:				
Alexandria	June 1-July 31	12	1	
Anderson	do	28		
Elwood	do	20		
Marion County:				
Indianapolis	June 1-Nov. 18	5		
Irvington	June 1-July 31	9		
Marshall County	Oct. 1-Oct. 31	1		
Miami County	Sept. 1-Sept. 30	1		
Michigan City	July 15-July 31	1		
Newton County	Sept. 1-Sept. 30	8		
Perry County	do	1		
Rockfield	July 1-July 31	1		
Monticello	July 1-Oct. 31	2	1	
Starke County	June 1-June 30	3		
Sullivan County	Aug. 1-Oct. 31	1		
Vallonia	Nov. 19	5		
Warren County	do	1		
Washington County	Nov. 27	1		
Wheeling	do	5		
Vanderburg County	do	2		
Total for State		199	9	
Indian Territory:				
Lebanon	Nov. 17			Smallpox reported.
Iowa.				
Des Moines	June 1-Aug. 31	13		
	Oct. 1-Oct. 31	1		
Total for State		14		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Kansas:				
Bourbon County	Oct. 1–Oct. 31	2		
Cherokee County	Sept. 1–Nov. 30	13		
Crawford County	July 1–Sept. 30	15		
Dickinson County	Oct. 1–Nov. 30	7		
Douglas County	Sept. 1–Nov. 30	8		
McPherson County	Oct. 1–Oct. 31	1		
Marion County	Nov. 1–Nov. 30	3		
Rawlins County	Oct. 1–Nov. 30	14		
Rush County	Oct. 1–Oct. 31			Some cases.
Shawnee County	July 1–Nov. 30	17		
Sumner County	do	14		
Thomas County	Nov. 1–Nov. 30	4		
Wichita	June 17–Dec. 15	63	1	
Total for State		161	1	
Kentucky:				
Covington	June 24–July 15	32		
Lexington	Oct. 7–Dec. 15	13		
Russell	Nov. 20			Smallpox epidemic.
Total for State		45		
Louisiana:				
Caddo	June 17–Aug. 4	11		
Caldwell	June 17–July 28	16	2	
New Orleans	June 17–Dec. 2	136	43	
Shreveport	June 17–Aug. 4	11		Nov. 28, 1899, to July 31 303 cases, 30 deaths.
St. Tammany	Oct. 28–Dec. 12	23	8	
Total for State		197	53	
Maryland:				
Baltimore	June 24–Sept. 1	5		
Cumberland	June 17–July 7	8		
Prince George County	Nov. 9–Nov. 14	9		
Total for State		22		
Massachusetts:				
Fall River	June 24–Sept. 15	9		
Lowell	July 15–Aug. 18	13		
Taunton	Oct. 28–Nov. 3	1		
Total for State		23		
Michigan:				
Custer	Dec. 3	60		
Delta County	Oct. 14–Nov. 10	1		
Grand Rapids	Nov. 25–Dec. 1	1		
Houghton County	Aug. 12–Nov. 10	70		
Isabella County	July 29–Aug. 18	5		
Jackson	July 1–July 7	1		
Mason County	Dec. 3	1		
Maple River Township	Oct. 14–Nov. 10	69		
Osceola	July 3–July 9	1		
Wayne County	June 1–Dec. 15	14	1	
Other places	Oct. 28–Nov. 10	34		
Total for State		257	1	
Minnesota:				
Akely	June 23–July 31	17		
Anoka County	June 16–Nov. 8	30		
Atwater	July 1–Nov. 8	5		
Beltrami County	June 23–July 31	6		
Carlton	June 16–Dec. 14	4		
Carver County	June 23–Aug. 31	11		
Cass County	July 1–Aug. 31	21		
Crow Wing County	July 1–Nov. 8	14		
Duluth	June 16–Dec. 14	106	1	
Faribault County	Aug. 1–Aug. 31	1		
Goodhue County	July 1–Nov. 8	5	1	
Hennepin County	July 1–Dec. 14	23		
Hubbard County	Aug. 1–Aug. 31	16		
Itasca County	July 1–Nov. 8	1		
Kandiyohi County	July 1–Dec. 14	47		
Lake County	do	4		
Lesueur County	do	58	1	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Minnesota—Continued.				
Lincoln County	July 1-Dec. 14	4	....	
Litchfield County	June 23-Dec. 14	1	....	
Little Falls	July 1-July 31	18	....	
Lyon County	Nov. 8-Dec. 14	29	....	
McLeod County	July 1-Nov. 8	2	....	
Martin County	Aug. 1-Aug. 31	1	....	
Meeker County	Nov. 8-Dec. 11	10	....	
Minneapolis	June 16-Dec. 15	86	....	
Nicollet County	July 1-Nov. 8	1	....	
Ottertail County	July 1-Sept. 30	38	2	
Pine County	Nov. 8-Dec. 14	2	....	
Princeton	June 16-July 31	1	....	
Ramsey County	Nov. 8-Nov. 22	1	....	
Redwood County	Nov. 22-Dec. 14	6	....	
Renville County	July 1-July 31	1	....	
Scott County	June 16-Aug. 31	44	....	
St. Paul	June 23-Dec. 11	12	....	
Sherburne County	Aug. 1-Aug. 31	7	....	
Stearns County	Nov. 22-Dec. 14	9	....	
Steele County	.....do	5	....	
Two Harbors	July 1-Sept. 30	7	....	
Traverse County	Aug. 1-Sept. 30	19	....	
Wabasha	.....do	8	....	
Wilkin County	Nov. 22-Dec. 14	2	....	
Winona County	July 29-Nov. 8	18	....	
	Nov. 22-Dec. 15	120	....	
Winsted	July 1-Sept. 30	18	....	
Wadena County	July 29-Aug. 4	7	....	
Wright County	June 16-Dec. 14	29	....	
Total for State		875	5	
Mississippi:				
Ocean Springs (vicinity)	July 19	11	....	
Missouri:				
St. Joseph	Oct. 1-Oct. 31	1	....	
St. Louis	Nov. 2-Dec. 16	10	....	
Total for State		11	....	
Montana:				
Butte	July 17-Sept. 20	25	....	
Nebraska:				
Omaha	June 21-Dec. 8	16	....	
New Hampshire:				
Manchester	June 17-Dec. 15	73	....	
New Jersey:				
Jersey City	June 18-June 24	1	....	
	Dec. 10-Dec. 16	1	....	
Newark	June 17-June 23	4	....	
Total for State		6	....	
New York:				
New York	June 17-Aug. 25	9	2	
	Nov. 4-Dec. 15	54	4	
Total for State		63	6	
North Carolina:				
Charlotte	June 1-July 31	11	....	
Wilmington	.....do	8	....	
Alamance County	May 1-Oct 31	2	....	
Buncombe County	.....do	6	....	
Burke County	.....do	22	....	
Cabarrus County	.....do	5	....	
Caswell County	.....do	19	....	
Chatham County	.....do	1	....	
Cherokee County	.....do	4	....	
Cleveland County	.....do	5	....	
Craven County	.....do	27	....	
Davidson County	.....do	9	....	
Davie County	.....do	9	....	
Durham County	.....do	11	....	
Edgecombe County	.....do	2	....	
Forsyth County	.....do	25	....	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
Franklin County	May 1–Oct. 31		Many.	
Gates County	do	1		
Granville County	do	25		
Guilford County	do	22		
Halifax County	do	1		
Harnett County	do	8		
Haywood County	do	5		
Henderson County	do	5		
Hertford County	do	2		
Iredell County	do	5		
Johnston County	do	17		
Lenoir County	Aug. 1–Aug. 31	1		
Mecklenburg County	May 1–Aug. 31	35		
Moore County	do	14		
Nash County	do	12		
New Hanover County	do	7		
Orange County	do	7		
Pamlico County	Oct. 1–Oct. 31	23		
Person County	May 1–Aug. 31	4		
Randolph County	do	17		
Richmond County	Oct. 1–Oct. 31	1		
Rockingham County	May 1–Aug. 31	153		
Rutherford County	do		A few.	
Vance County	Aug. 1–Aug. 31			Several cases.
Wake County	Oct. 1–Oct. 31	5		
Wilkes County	Aug. 1–Aug. 31	12		
Total for State		548		
North Dakota:				
Rolla	Aug. 1–Nov. 20	19	2	
Wheatland	Nov. 20	9		
Total for State		28	2	
Ohio:				
Cincinnati	June 16–Sept. 21	31		
Portsmouth	June 24–Dec. 15	16		
Youngstown	Jan. 1–June 30	13		
Allen County—				
Shawnee Township	do	7		
Ashtabula County	Jan. 1–Dec. 15	61		
Auglaize County	Jan. 1–June 30	10		
Brown County	do	4		
Butler County	do	4		
Clark County	do	5		
Clinton County—				
New Vienna	do	1		
Columbiana County—				
Wellsville	do	19	2	
Coshocton County—				
Clark Township	do	2		
Cuyahoga County—				
Berea	do	5		
Brooklyn Township	do	2		
Cleveland	Jan. 1–Dec. 15	801	9	
Dover Township	Jan. 1–June 30	1		
East Cleveland	do	3		
Glenville	do	4		
Mayfield Township	do	14		
Newburg	do	30		
Lakewood	do	2		
Rockport	do	2		
West Park Township	do	1		
Darke County	do	12		
Defiance County—				
Highland Township	do	8		
Delaware County	do	44		
Findlay	Nov. 1–Nov. 30	2		
Franklin County—				
Columbus	Jan. 1–June 30	39		
Fulton County—				
Wauseon	do	2		
Geauga County—				
Burton	do	3		
Greene County—				
Cedarville	do	20	2	
Hamilton County—				
Cincinnati	do	99	1	
Hydepark	do	1		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Ohio—Continued.				
Hancock County—				
Findlay	Jan. 1-June 30	1		
Hardin County—				
McGuffey	do	3		
Henry County	do	120	3	
Huron County—				
Bellevue	do	9		
Lake County	do	2		
Licking County	do	2		
Lorain County	do	98	2	
Lucas County—				
Toledo	do	3		
Madison County	do	52		
Medina County—				
Lodi	do	2		
Mercer County	do	28		
Montgomery County—				
Dayton	Jan. 1-Sept. 8	9		
Morrow County	Jan. 1-June 30	4		
Pike County—				
Waverly	do	2		
Portage County—				
Kent	do	1		
Putnam County	do	6		
Ross County—				
Kingston	do	1		
Scioto County—				
Portsmouth	do	1		
Stark County	do	26	1	
Summit County—				
Akron	do	1		
Trumbull County	do	20	1	
Tuscarawas County—				
Dennison	do	1		
Union County—				
Jerome Township	do	2		
Washington County—				
Marietta	do	1		
Wayne County—				
Salt Creek Township	do	3		
Total for State		1,666	21	
Oregon:				
Portland	Oct. 31	1		
Pennsylvania:				
Allegheny City	Nov. 25-Dec. 1	1		
Erie	Dec. 9-Dec. 15	5		
Philadelphia	June 24-Oct. 20	13		
Pittsburg	June 17-July 7	5		
	Nov. 18-Nov. 24	3		
Steelton	Nov. 18-Dec. 8	3		
Total for State		30		
South Carolina:				
Greenville	July 8-July 14	1		
	Nov. 25-Dec. 15	5		
Total for State		6		
Tennessee:				
Memphis	Nov. 11-Dec. 15	7		
Nashville	Nov. 4-Dec. 8	7		
Campbell County	Mar. 5-Nov. 16	11		
Chatham County	do	11	1	
Chester County	do	35		
Cumberland County	do	23		
Davidson County	do	57	1	
Dyer County	do	26		
Franklin County	do	31		
Gibson County	do	26		
Giles County	do	81		
Grundy County	do	41	1	
Hamblen County	do	30	1	
Hamilton County	do	42	1	
Haywood County	do	2		
Henry County	do	150		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900—Continued

Places.	Date.	Cases.	Deaths.	Remarks.
Tennessee—Continued.				
Houston County	Mar. 5–Nov. 16	14		
Knox County	do			No report.
Lauderdale County	do	12		
Lawrence County	do	18		
Lewis County	do	1		
Lincoln County	do	13		
Madison County	do	47	2	
Marion County	do	113	2	
Maury County	do			Do.
Montgomery County	do	26		
Obion County	do	87	1	
Putnam County	do	42	2	
Roane County	do	15		
Robertson County	do	12		
Rutherford County	do	37		
Scott County	do	1		
Shelby County	do	254	6	
Wayne County	do	3		
White County	do	2		
Williamson County	do	115		
Wilson County	do	11		
Total for State		1,403	18	
TEXAS:				
Beaumont	Feb. 1–June 1	107		
Blue Springs	Nov. 24			Smallpox reported.
Carrizo	July 9	1		
Eagle Pass	Sept. 7	1		
Fort Bend County	Aug. 1, 1899, to Aug. 1, 1900.	156	2	
Galveston	Dec. 7	3		
Houston	Nov. 11–Dec. 15	41	1	
Jack County	Nov. 13	12		
Pittsburg	Nov. 28	1		
Robertson County	June 16	300	2	
San Antonio	June 1–June 30	1		
Smithville	Nov. 13	4		
Sublime	Nov. 18–Nov. 24	14		
Terrell	Nov. 13	1	1	
Vashti	Nov. 24			Do.
Total for State		642	6	
Utah:				
Ogden	June 24–Nov. 30	66	1	Dec. 13, 1899, to Aug. 1, 1900, 106 cases; deaths, 0
Salt Lake City	July 1–Dec. 15	241	1	
Total for State		307	2	
Vermont:				
Caledonia County	Aug. 7	20		
Franklin County	do	2		
Orleans County	do	6		
Total for State		28		
Virginia:				
Alexandria	Nov. 18–Dec. 5	2		
Petersburg	June 1–Aug. 26	4		
Roanoke	June 1–Aug. 31	23	1	
Total for State		29	1	
Washington:				
Lewis County	June 26	2		
Puyallup County	Sept. 6			Several cases.
Seattle	June 24–Nov. 30	47		
Tacoma	Aug. 5–Dec. 11	10		
Total for State		59		
West Virginia:				
Harrison County	Nov. 25	18		
Wheeling	Sept. 2–Dec. 15	11		
Total for State		29		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, June 29, 1900, to December 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Wisconsin:				
Milwaukee	Dec. 9-Dec. 15	1	....	
Sixteen places	May 1-May 31	122	3	
Ten places	June 1-June 30	29	1	
Eight places	July 1-July 31	26	....	
Six places	Aug. 1-Aug. 31	45	....	
Ashland, Bayfield, Dane, and Eau Claire counties, and others.	Sept. 1-Dec. 11	189	....	
Total for State	....	412	4	
Wyoming:				
Carbon County	Dec. 10	1	....	
Sweetwater County	.....do	1	....	
Uintah County	.....do	2	....	
Total for State	....	4	....	
Grand total	....	7,805	137	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901.

Place.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Lee County (Phœnix)	Dec. 26	16	....	
Mobile	Feb. 12-Mar. 9	4	3	
Russell County (Girard)	.....do	25	....	
Total for State	....	45	3	
Alaska:				
Douglas	May 25	5	....	Indians.
Sitka	Apr. 6	....	....	Prevailing among the Indians.
Total for Territory	....	5	....	
Arkansas:				
Newport	May 21	5	....	
Prescott	May 1	5	....	
Total for State	....	10	....	
California:				
Los Angeles	Feb. 3-June 15	37	....	
Oakland	Dec. 30-May 31	14	....	
Sacramento	Feb. 26-Mar. 2	1	....	
San Francisco	Feb. 3-June 9	62	....	
Stockton	Mar. 1-Mar. 31	1	....	
Total for State	....	115	....	
Colorado:				
Arapahoe County	Nov. 13-May 31	395	3	
Archuleta County	Nov. 13-Mar. 30	3	....	
Baca County	May 1-May 31	2	....	
Bent County	Nov. 13-Apr. 30	25	....	
Boulder County	Nov. 13-May 31	68	....	
Chaffee County	.....do	37	....	
Cheyenne County	Nov. 13-Mar. 30	2	....	
Clear Creek County	.....do	91	....	
Costilla County	Apr. 1-May 31	12	....	
Custer County	Nov. 30-May 31	12	....	
Delta County	.....do	144	....	
Douglas County	Nov. 13-Mar. 30	10	....	
Eagle County	Feb. 1-Mar. 30	4	....	
Elbert County	Nov. 13-Mar. 30	19	....	
El Paso County	Nov. 13-May 31	178	....	
Fremont County	.....do	127	....	
Garfield County	.....do	157	....	
Gilpin County	Nov. 13-Mar. 30	3	....	
Grand County	.....do	6	....	
Gunnison County	Nov. 13-May 31	5	....	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Colorado—Continued.				
Huerfano County	Nov. 13–Apr. 30	55		
Jefferson County	Nov. 13–May 31	83		
Lake County	do	45		
La Plata County	do	21		
Larimer County	do	21		
Las Animas County	do	61		
Mesa County	Feb. 1–May 31	35		
Mineral County	May 1–May 31	24		
Montrose County	Nov. 13–May 31	19		
Morgan County	do	5		
Otero County	do	59		
Ouray County	do	33		
Park County	Feb. 28–May 31	29		
Pitkin County	Nov. 13–May 31	11		
Prowers County	Feb. 1–Apr. 30	35		
Pueblo County	Nov. 13–May 31	154		
Rio Grande County	do	10		
Saguache County	do	23		
San Juan County	Feb. 28–May 31	11		
San Miguel County	Nov. 13–Mar. 30	4		
Teller	Nov. 13–May 31	324		
Washington County	May 1–May 31	5		
Weld County	Nov. 13–May 31	56		
Total for State		2,423	3	
Connecticut:				
Bridgeport	Jan. 1–June 15	12		
Greenwich	June 15	7		
Total for State		19		
Delaware:				
Newcastle	Apr. 1–Apr. 15	4		
Port Penn	Apr. 28–May 4	1		
Seaford	Mar. 25	53		
Total for State		58		
District of Columbia:				
Washington	Dec. 16–June 1	52		
Florida:				
Columbia County	Jan. 1–Feb. 10	9		
Duval County	Jan. 1–Apr. 6	39		
Escambia County	Jan. 1–Feb. 10	1		
Jacksonville	Dec. 16–Apr. 27	77	1	
Key West	June 15	1		
Lake County	Jan. 1–Feb. 10	5		
Marion County	do	1		
West Tampa City	Dec. 30–Jan. 5	2		
Total for State		135	1	
Georgia:				
Columbus	Dec. 26	10		
Macon	Feb. 1–May 31	16		
Thomson	Jan. 1–May 28	300	3	
Twiggs County	Feb. 3	1		
Wilkinson County	do	1		
Total for State		328	3	
Idaho:				
Dempsey	Nov. 23	10		
Illinois:				
Anna	Dec. –Mar. 18	50		
Beachwood (Mounds)	Feb. 2–Feb. 23	10		
Cairo	Dec. 22–Apr. 20	83		
Chicago	Dec. 23–June 15	234	3	
Freeport	Apr. 21–May 11	5		
Quincy	Dec. 1–Feb. 28	15		
Springfield	Jan. 1–Jan. 31	5		
Total for State		402	3	
Indiana:				
Allen County	Mar. 1–Apr. 30		1	
Clay County	Apr. 1–May 31	47		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indiana—Continued.				
Clinton County	Apr. 1-Apr. 30	10	....	
Daviess County	Feb. 1-Apr. 30	10	1	
Dearborn County	Mar. 1-May 31	11	....	
Dekalb County	Feb. 1-May 31	71	....	
Delaware County (Muncie)	Mar. 1-Apr. 30	31	....	
Dubois County	Feb. 1-May 31	35	1	
Elkhart County	.....do	12	....	
Fayette County	Apr. 1-Apr. 30	9	....	
Floyd County	May 1-May 31	3	....	
Fulton County	Mar. 1-May 31	29	....	
Hamilton County	Apr. 1-Apr. 30	5	....	
Hancock County	May 1-May 31	4	....	
Howard County	Mar. 1-May 31	30	....	
Jefferson County	May 1-May 31	5	....	
Knox County	.....do	7	....	
Lake County	Feb. 1-May 31	64	....	
Laporte County	Apr. 23-June 17	9	1	
Lawrence County	Mar. 1-May 31	135	....	
Madison County	Apr. 1-May 31	20	....	
Marion County (Indianapolis)	Feb. 1-May 31	88	2	
Monroe County	Feb. 1-Apr. 30	5	....	
Newton County	.....do	3	....	
Noble County	Mar. 1-Apr. 30	2	....	
Ohio County	Feb. 1-Apr. 30	46	....	
Parke County	Apr. 1-Apr. 30	1	....	
Perry County	Feb. 1-May 31	13	....	
Pike County	Feb. 1-Apr. 30	8	....	
Posey County	Mar. 1-Apr. 30	6	....	
Putnam County	Apr. 1-Apr. 30	1	....	
Randolph County	Feb. 1-Apr. 30	1	....	
Ripley County	Apr. 1-Apr. 30	5	....	
St. Joseph County	Feb. 1-June 15	3	....	
Steuben County	Mar. 1-Apr. 30	8	....	
Switzerland County	Mar. 1-May 31	266	....	
Tipton County	.....do	6	....	
Union County	May 1-May 31	1	....	
Vanderburg County (Evansville).	Feb. 24-June 22	28	....	
Vermilion County	Mar. 1-Apr. 30	22	1	
Vigo County	Feb. 1-Apr. 30	2	....	
Wabash County	.....do	4	....	
Wayne County	.....do	1	....	
Total for State	....	1,070	7	
Indian Territory:				
Ardmore	Feb. 7	16	....	
Chickasha	Jan. 1-Apr. 17	200	....	
Coalgate	May 11	50	....	
Ryon	Feb. 19	....	....	Several cases.
Total for Territory	....	266	....	
Iowa:				
Clinton	Mar. 24-June 15	6	....	
Davenport	Feb. 1-May 31	32	....	
Des Moines	Dec. 1-Dec. 31	3	....	
Ottumwa	Jan. 6-June 1	25	....	
Total for State	....	66	....	
Kansas:				
Allen County	May 1-May 31	23	....	
Barber County	Mar. 1-Mar. 31	1	....	
Barton County	.....do	10	....	
Bourbon County	Dec. 1-Mar. 31	55	....	
Butler County	.....do	2	....	
Chase County	Mar. 1-Mar. 31	3	....	
Chautauqua County	.....do	21	....	
Cherokee County	Jan. 1-May 31	736	2	
Clay County	Feb. 1-May 31	17	....	
Clark County	May 1-May 31	4	....	
Crawford County	Dec. 1-Mar. 31	824	2	
Coffey County	Feb. 1-Mar. 31	94	....	
Cowley County	.....do	5	....	
Dickinson County	.....do	16	....	
Douglas County	Dec. 1-May 31	43	....	
Edwards County	Mar. 1-May 31	2	....	
Ellis County	.....do	7	....	
Franklin County	Dec. 1-Mar. 31	4	....	
Graham County	Feb. 1-Mar. 3	28	....	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Kansas—Continued.				
Greenwood County	Jan. 1–May 31	84	1	
Hamilton County	Feb. 1–Mar. 3	30	....	
Kingman County	May 1–May 31	9	....	
Jewell County	Mar. 1–Mar. 31	50	....	
Johnson County	.....do	3	....	
Kingman County	.....do	5	....	
Kiowa County	Mar. 1–May 31	4	....	
Labette County	Dec. 1–May 31	197	1	
Leavenworth County (Leavenworth).	Jan. 27–May 31	39	1	
Linn County	Mar. 1–May 31	21	....	
Lincoln County	.....do	9	....	
Logan County	May 1–May 31	10	....	
Lyon County	Mar. 1–May 31	56	....	
Marshall County	.....do	2	....	
Marion County	Dec. 1–Mar. 3	24	....	
Miami County	.....do	16	....	
Montgomery County	.....do	66	....	
Morton County	Mar. 1–Mar. 31	9	....	
Nemaha County	.....do	1	....	
Ness County	Feb. 1–May 31	56	....	
Neosho County	.....do	30	1	
Norton County	Jan. 1–May 31	195	2	
Osborne County	.....do	32	....	
Osage County	.....do	187	2	
Pawnee County	Feb. 1–Mar. 3	25	....	
Phillips County	.....do	318	2	
Do	May 1–May 31	29	1	
Pottawatomie County	.....do	4	....	
Pratt County	Mar. 1–May 31	31	....	
Rawlins County	Dec. 1–Mar. 3	10	1	
Reno County	Mar. 1–Mar. 31	4	....	
Republic County	Feb. 1–Mar. 3	42	1	
Rooks County	May 31	34	....	
Rush County	Dec. 1–Mar. 3	1	....	
Saline County	Mar. 1–Mar. 31	54	....	
Sedgwick County (Wichita)	Dec. 1–June 15	379	2	
Seward County	Mar. 1–Mar. 31	12	....	
Shawnee County (Topeka)	Dec. 1–May 31	252	3	
Sherman County	.....do	13	....	
Smith County	Jan. 1	13	....	
Stafford County	Feb. 1–Mar. 3	40	2	
Stevens County	Mar. 1–Mar. 31	1	....	
Sumner County	Dec. 1–May 31	112	2	
Thomas County	Mar. 1–May 31	7	....	
Washington County	.....do	11	....	
Wallace County	Jan. 1–Mar. 3	10	....	
Woodson County	Feb. 1–Mar. 3	1	....	
Wyandotte County (Kansas City).	Dec. 1–Mar. 3	34	....	
All the State		411	....	
Total for State		4,878	26	
Kentucky:				
Cynthiana	Apr. 17	6	....	
Lexington	Dec. 16–June 22	58	....	
Louisville	Dec. 20–Mar. 23	11	1	
Total for State		75	1	
Louisiana:				
Baton Rouge	May 6–May 12	2	1	
Bossier Parish	Apr. 1–May 15	18	1	
Caddo	.....do	7	3	
New Orleans	Dec. 2–June 15	240	46	
Sabine	Apr. 1–Apr. 30	1	....	
Shreveport	Dec. 2–June 15	14	1	
Total for State		282	52	
Maine:				
Bangor	May 29–June 20	8	....	
Dexter	.....do	1	....	
Lewiston	.....do	7	....	
Milo	.....do	4	....	
Portland	Mar. 24–June 15	3	....	
Waterville	May 29–June 20	1	....	
Total for State		24	....	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Maryland:				
Baltimore	Dec. 16–June 8	13		
Cumberland	Feb. 1–May 31	24		
Total for State		37		
Massachusetts:				
Boston	Mar. 21–June 8	16	1	
Fall River	June 8–June 22	8		
Fitchburg	Apr. 13–May 24	7	1	
Holyoke	Apr. 21–May 4	2		
Lawrence	Jan. 13–Feb. 2	4		
Lowell	Mar. 3–Mar. 9	1		
Marlboro	May 25–June 8	2		
New Bedford	May 8–June 22	37	2	1 case on schooner D. A. Story; 27 cases and 1 death on schooner Zulamira, Brava, Cape Verde Islands, June 4.
Worcester	June 7–June 14	8	2	
Oxford	Oct. 22	2		
Quincy	June 1	1		
Somerville	Mar. 3–June 8	3		
Springfield	Jan. 6–Mar. 23	2		
Total for State		93	6	
Michigan	Dec. 30–Apr. 27			Smallpox present in 82 places in Michigan during the week ended June 15, 1901.
Alger County	Feb. 17–Feb. 23			Present.
Bay County (Bay City)	Mar. 17–May 31	16		
Calhoun County	May 11			Do.
Charlevoix County	Feb. 17–Feb. 23			Do.
Chippewa County	May 4			Do.
Clare County	Feb. 17–May 11			Do.
Eaton County	May 4			Do.
Gladwin County	May 11			Do.
Grand Rapids	Dec. 30–May 11	12		
Grand Traverse County	May 11			Do.
Gratiot County	May 31		2	
Isabella County	Feb. 17–May 11			Do.
Kent County	June 1	2		
Luce County	May 4–May 11			Do.
Mackinac County	do			Do.
Manistee	Jan. 20–Feb. 16	11		
Mason County	Feb. 17–Mar. 2			Do.
Midland County	May 4–May 11			Do.
Missaukee County	do			Do.
Montcalm County	do			Do.
Muskegon County	do			Do.
Newaygo County	do			Do.
Osceola County	May 4–May 31		1	
Saginaw County	May 4			Do.
Schoolcraft County	Feb. 24–Mar. 2			Do.
St. Clair County	May 4–May 11			Do.
Shiawassee County	do			Do.
Tuscola County	May 11			Do.
Van Buren County	May 4–May 11			Do.
Wayne County (Detroit)	Mar. 3–June 22	332	1	
West Bay City	Feb. 10–June 8	14		
Total for State, reported		387	7	Three depths reported in State, places not named.
Minnesota:				
Aitkin County	Jan. 1–Apr. 22	29		
Anoka County	Jan. 15–May 20	96		
Becker County	Apr. 22–May 20	4		
Beltrami County	Jan. 15–June 17	173		
Benton County	Dec. 14–June 17	35		
Big Stone County	Jan. 1–June 17	52		
Blue Earth	Jan. 28–May 20	98		
Brown County	Dec. 14–June 17	96		
Carlton County	do	40		
Carver County	Jan. 1–June 17	54		
Cass County	Dec. 14–June 17	80		
Chippewa County	Jan. 15–June 1	31	2	
Chisago County	Jan. —June 17	46		
Clay County	Jan. 28–Apr. 8	11		
Cottonwood County	Dec. 14–June 3	10		
Crow Wing County	Dec. 14–June 17	100		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901.—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Minnesota.—Continued:				
Dakota County	Dec. 14–June 17	53		
Dodge County	do	54		
Douglas County	Apr. 22–June 3	22		
Faribault County	Jan. 28–June 17	82		
Fillmore County	Apr. 22–June 17	29		
Freeborn County	Jan. 15–June 17	72	1	
Goodhue County	Jan. 15–Apr. 8	11		
Hennepin County	Dec. 14–Apr. 8	66		
Hennepin County (Minneapolis).	Dec. 14–June 15	319	1	
Houston County	Jan. 15–June 3	41		
Hubbard County	Dec. 14–Apr. 22	6	1	
Isanti County	Jan. 28–May 20	15		
Itasca County	June 17	39		
Jackson County	Jan. 15 June 17	48		
Kanabec County	Jan. —June 17	8		
Kandiyohi County	Dec. 14–Apr. 22	186		
Kittson County	June 3	3		
Lac qui Parle County	Apr. 8–June 17	172		
Lake County	Jan. 1–June 3	74		
Lesueur County	Dec. 14–June 17	210		
Lincoln County	Apr. 8–May 20	8		
Lyon County	Dec. 14–June 3	95	2	
Marshall County	Jan. 1–June 3	18		
Martin County	Jan. 15–May 20	32		
McLeod County	Jan. 15–June 17	2		
Meeker County	Dec. 14–June 17	85		
Mille Lacs County	Feb. 13–June 17	3		
Morrison County	Jan. 28–June 17	77		
Mower County	Apr. 8–June 17	16		
Murray County	Feb. 13–June 17	17		
Nicollet County	Jan. 15–June 3	14		
Nobles County	Dec. 14–Apr. 8	38		
Norman County	Apr. 8–June 17	12		
Olmsted County	Dec. 14–June 17	35		
Ottertail County	Jan. 1–June 17	107		
Pine County	Jan. 15–June 17	62	1	
Pipestone County	Dec. 14–June 3	71		
Polk County	Jan. 15–June 17	109		
Pope County	Apr. 8–June 17	28		
Ramsey County (St. Paul)	Dec. 14–June 17	105	2	
Red Lake County	June 3–June 17	30		
Redwood County	Jan. 1–June 17	83		
Renville County	Jan. 1–June 17	38		
Rice County	Jan. 5–June 17	108		
Roseau County	Apr. 8–May 20	7		
St. Louis County (Ely)	June 3–June 17	5		
Scott County	Jan. 28–June 17	14		
Sherburne County	Apr. 22–June 3	4		
Sibley County	do	52		
Stearns County	Jan. 28–June 17	129		
Steele County	Jan. 1–June 3	65		
Stevens County	Jan. 15–June 17	8		
St. Louis County (Duluth)	Dec. 14–June 8	481		
Swift County	Jan. 1–May 20	9		
Todd County	Dec. 14–May 20	9		
Traverse County	Jan. 15–May 20	8		
Wabasha County	Jan. 15–June 17	62		
Wadena County	Jan. 1–June 3	16		
Waseca County	Jan. 1–May 20	16		
Washington County	Jan. 15–June 17	171		
Watonwan County	Jan. 28–Apr. 8	29		
Wilkin County	Jan. 28–June 17	42		
Winona County	Dec. 14–June 17	125		
Winona County (Winona)	Dec. 14–June 15	168		
Wright County	Jan. 1–May 22	92		
Yellow Medicine County	Jan. 1–June 17	7		
Other places		44		
Total for State		5,024	10	
Mississippi:				
Vicksburg	Feb. 3–Feb. 9	4	2	
Missouri:				
Carthage	Jan. 1–June 4	167	2	
St. Joseph	Jan. 1–Jan. 31	34	1	
St. Louis	Dec. 17–June 16	401	3	
Total for State		602	6	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Montana:				
Butte	Dec. 20–Jan. 20	218	2	
Nebraska:				
Columbus	Mar. 1			Present.
Decatur and vicinity	Apr. 1–Dec. 14	451	4	
Lincoln	Mar. 1			Do.
Nebraska City	Jan. 1–May 18	26		
Omaha	Dec. 23–June 15	213		
South Omaha	Dec. 28–May 31	128		
Total for State		818	4	
Nevada:				
Virginia City	Jan. 9	1		
New Hampshire:				
Manchester	Dec. 17–June 15	376		26 cases, month of May.
New Jersey				286 cases, Jan. 1 to June 1.
Camden	May 5–May 25	2		
Jersey City	Dec. 17–June 15	52		
Essex County (Newark)	Feb. 10–June 22	41	4	
Hudson County	Mar. 21–Mar. 31	12	1	
Passaic County	May 25	1		
Patterson	Apr. 1–Apr. 31	13		
Plainfield	June 15	1		
Total for State		122	5	
New Mexico:				
Fort Stanton	Jan. 14–Feb. 28	4		
New York:				
Buffalo	June 20	1		
Elmira	Feb. 24–Mar. 9	2		
New York	Dec. 16–June 22	1,376	235	
Utica	Jan. 13–Jan. 26	2		
Yonkers	Feb. 23–Mar. 1	1		
Total for State		1,382	235	
North Carolina:				
Alamance County	Jan. 1–Mar. 31	3		
Alexander County	Nov. 1–Mar. 31	3		
Buncombe County	Dec. 1–Mar. 31	13		
Cabarrus County	Jan. 1–Mar. 31	8		
Caswell County	Nov. 1–Mar. 31	114	2	
Chatham County	Jan. 1–Mar. 31	5		
Cleveland County	To Mar. 31	12		
Cumberland County	Jan. 1–Mar. 31	6		
Currituck County	do	6		
Davidson County	To Mar. 31	39		
Durham County	do	45		
Forsyth County	Dec. 1–Mar. 31	8		
Franklin County	do	1		
Gaston County	To Mar. 31	21		
Granville County	Dec. 1–Mar. 31	21		
Greene County	Jan. 1–Mar. 31	194		
Guilford County	Jan. 1–Mar. 31	7		
Halifax County	To Mar. 31	14		
Harnett County	Jan. 1–Mar. 31			A few cases.
Henderson County	Nov. 1–Mar. 31			A few deaths.
Lincoln County	Jan. 1–Mar. 31	2		
Mecklenburg County	Jan. 1–May 31	56	2	
Nash County	Jan. 1–Mar. 31	56		
Orange County	To Mar. 31	34		
Pamlico County	Dec. 1–Mar. 31	3		
Pasquotank County	Jan. 1–Mar. 31	15		
Person County	Nov. 1–Mar. 31	20		
Pitt County	To Mar. 31	7		
Polk County	do	3		
Richmond County	Nov. 1–Mar. 31	1		
Robeson County	To Mar. 31	38		
Rockingham County	Dec. 1–Mar. 31	23		
Transylvania County	Nov. 1–Mar. 31	5		
Vance County	Dec. 1–Mar. 31	1		
Wake County	Nov. 1–Mar. 31	19		
Watauga County	Jan. 1–Mar. 31	10		
Wayne County	To Mar. 31	2		
Wilkes County	Nov. 1–Mar. 31	3		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
Wilson County	Jan. 1-Mar. 31	18		
Yancey County	do	9		
Total for State		845	4	
North Dakota:				
Bismarck	Jan. 20	1		
Burleigh County	Mar. 12	15		
Jamestown	Jan. 7	1		
Mandan	Jan. 15	1		
Morton County	Jan. 25-Mar. 12	35		
Richland County	Mar. 12	3		
Walsh County	do	4	1	
Total for State		60	1	
Ohio:				
Adams County	Jan. 1-Mar. 31	10	2	
Allen County	do	3		
Ashland County	do	4		
Ashtabula County	do	34		
Athens County	do	18		
Belmont County	do	7		
Brown County	do	2		
Carroll County	do	1		
Champaign County	do	2	2	
Columbiana County	do	3		
Coshocton County	do	2		
Crawford County	do	13		
Cuyahoga County (Cleveland)	Jan. 1-June 17	1,028	11	
Defiance County	Jan. 1-Mar. 18	22		
Delaware County	do	4		
Erie County	do	1		
Fairfield County	do	1		
Franklin County	do	28		
Gallia County	do	66	1	
Geauga County	do	31		
Greene County	do	1		
Guernsey County	do	11		
Hamilton County (Cincinnati)	Jan. 1-June 14	79	1	
Hardin County	Jan. 1-May 31	17		
Harrison County	do	16		
Henry County	do	5		
Hocking County	do	8	2	
Huron County	do	37	1	
Jackson County	do	2		
Jefferson County	do	4		
Lawrence County	do	38		
Lorain County	do	47	1	
Lucas County	Jan. 1-June 15	24		
Mahoning County	Jan. 1-May 31	5		
Marion County	do	1		
Montgomery County	June 15	5		
Paulding County	Jan. 1-Mar. 31	38		
Perry County	do	60		
Pike County	do	2		
Putnam County	do	15		
Richland County	do	31	1	
Sciota County (Portsmouth)	do	84	2	
Seneca County	do	3		
Trumbull County	do	15	1	
Tuscarawas County	do	1		
Van Wert County	do	14		
Vinton County	do	32	1	
Williams County	do	132		
Wyandot County	do	1		
Youngstown	May 25	1		
Total for State		2,009	26	
Oklahoma:				
Reports from fifteen counties	Dec. 1-Dec. 31	401		
Canadian County	Jan. 1	5		
Cleveland County	do	19		
Day County	do	1		
Garfield County	do	1		
Greer County	do	50		
Kingfisher County	do	2		
Lincoln County	do	13		
Logan County	do	10		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Oklahoma—Continued.				
Noble County	Jan. 1	12		
Oklahoma County	do	13		
Pawnee County	do	5		
Payne County	do	12		
Pottawatomie County	do	25		
Roger Mills County	do	50		
Washita County	do	10		
Woodward County	do	1		
Total for Territory		690		
Oregon:				
Portland	Jan. 4–June 5	12		
Pennsylvania:				
Philadelphia	Jan. 6–June 22	57	7	
Allegheny County	Dec. 1–June 21	99	3	
Armstrong County	June 21	1		
Bedford County	Apr. 1–Apr. 30	25		
Blair County	do	2		
Butler County	Mar. 1–Mar. 31	2		
Clearfield County	Feb. 1–Mar. 31	1		
Cumberland County	Apr. 1–June 21	14		
Dauphin County	Feb. 1–May 18	190		
Erie County	Feb. 1–May 25	31		
Fayette County	do	3		
Franklin County	Mar. 1–June 21	14	1	
Greene County	Feb. 1–Mar. 31	2		
Lancaster County	Mar. 1–Mar. 31	1		
Lawrence County	Apr. 1–Apr. 30	1		
Lebanon County	Apr. 13–June 22	19		
Lycoming County	Feb. 1–May 25	43		
Luzerne County	June 21	14		
McKean County	Mar. 1–June 21	9		
Mercer County	Apr. 1–June 17	13		
Perry County	Apr. 1–June 21	17		
Sullivan County	June 21	8		
Tioga County	Apr. 1–June 21	8		
Warren County	Mar. 1–Mar. 31	1		
Washington County	Feb. 1–Mar. 31	11		
Westmoreland County	Mar. 1–June 21	13		
York County	Mar. 1–Mar. 31	10		
Total for State		639	11	
Rhode Island;				
Central Falls	Dec. 26–Mar. 15	5	1	
Coventry	May 30	1		
Evanston	do	8		
Providence	June 1–June 22	5	2	
River Point (Warwick)	Mar. 10–June 11	8		
Total for State		27	3	
South Carolina:				
Blacksburg	Feb. 5	3		
Charleston	Apr. 2			A few cases.
Georgetown (vicinity)	Apr. 27			Present.
Greenville	Dec. 23–Mar. 16	7	1	
Total for State		10	1	
Tennessee:				
Anderson County	Oct. 1–Apr. 1	65		
Bedford County	do	9		
Blount County	do	13		
Bradley County	do	31	1	
Campbell County	do	65	1	
Cannon County	do	9		
Carroll County	do	131	2	
Cheatham County	do	29	1	
Chester County	do	16	1	
Claiborne County	do	9		
Cocke County	do	60		
Coffee County	do	101		
Crockett County	do	100	1	
Cumberland County	do	6		
Davidson County (Nashville)	Oct. 1–June 15	266	2	
Decatur County	Oct. 1–Apr. 1	165		
Dickson County	do	43	1	

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Tennessee—Continued.				
Dyer County	Oct. 1–Apr. 1	10		
Fayette County	do	50	1	
Franklin County	do	75		
Gibson County	do	103		
Giles County	do	13		
Grainger County	do	16		
Greene County	do	23		
Grundy County	do	5		
Hamblen County	do	40		
Hamilton County	do	267	10	
Hancock County	do	26		
Hardeman County	do	23		
Hardin County	do	53		
Haywood County	do	16		
Henderson County	do	40		
Henry County	do	231	5	
Hickman County	do	24		
Houston County	do	72	1	
Humphreys County	do	38		
Jefferson County	do	147	1	
Knox County	Oct. 1–Apr. 30	176	2	
Lake County	Oct. 1–Apr. 1	20	1	
Lauderdale County	do	30	1	
Lewis County	do	1		
Lincoln County	do	60		
Loudon County	do	8		
Madison County	do	108	6	
Marion County	do	113	3	
Marshall County	do	10		
Maury County	do			Not reported.
McMinn County	do	3		
McNairy County	do	65		
Montgomery County	do	57	15	
Obion County	do	20		
Perry County	do	3		
Polk County	Oct. 1–Apr. 21	19		
Putnam County	Oct. 1–Apr. 1	83	4	
Rhea County	do	79	3	
Roane County	do	112	2	
Robertson County	do	14	1	
Rutherford County	do	285	4	
Scott County	do	21		
Shelby County	Oct. 1–June 21	395	30	
Stewart County	Oct. 1–Apr. 1	2		
Sumner County	do	19		
Tipton County	do	58	1	
Warren County	do	5	2	
Washington County	do	1		
Wayne County	do	15		
Weakley County	do	100	3	
White County	do	30		
Williamson County	do	52		
Wilson County	do	2		
Total for State		4,356	106	
Texas:				
Clay County	Feb. 1	116	3	
Foard County	Apr. 1–Apr. 30	85		
Galveston	Jan. 10–May 7	168	1	
Houston	Dec. 16–Jan. 26	184	4	
San Antonio	Dec. 1–May 31	76		
Total for State		629	8	
Utah:				
Ogden	Dec. 1–May 31	188		
Salt Lake City	Dec. 16–June 15	632	4	
Total for State		820	4	
Vermont:				
Rutland	June 15	1		
Virginia:				
Alexandria County	May 7	1		
Albemarle County	Feb. 4			Present.
Bedford County	do			Do.
Bland County	do			Do.
Botetourt County	do			Do.

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Virginia—Continued:				
Buckingham County	Feb. 4			Present.
Campbell County	do			Do.
Carroll County	do			Do.
Chesterfield County	do			Do.
Craig County	do			Do.
Floyd County	do			Do.
Fluvanna County	do			Do.
Goochland County	do			Do.
Greenesville County	do			Do.
Halifax County	do			Do.
King George County	do			Do.
Lee County	do			Do.
Louisa County	do			Do.
Middlesex County	do			Do.
Nelson County	do			Do.
Orange County	do			Do.
Page County	do			Do.
Pittsylvania County	Dec. 31	200		Do.
Richmond	Jan. 7	4		
Roanoke County	Jan. 1-May 21	182	5	
Rockbridge County	Jan. 1-Mar. 31			
Rockingham County	do			Do.
Alexandria	Dec. 29-Feb. 9	5		Do.
Total for State		392	5	
Washington:				
Aberdeen	May 21	4		
Hoquiam	June 10	1		
Port Townsend	May 25	5		
Seattle	Dec. 1-May 31	62		On steamship Senator.
Tacoma	Dec. 9-June 2	12		
Total for State		84		
West Virginia:				
Huntington	Feb. 17-May 24	91		
Wheeling	Dec. 16-June 15	37	1	
Total for State		128	1	
Wisconsin:				
All over the State	Dec. 12-Dec. 31	99	1	
Ashland County	Jan. 1-Feb. 28	15		
Barron County	do	5		
Bayfield County	do	5		
Brown County	Dec. 12-June 15	23		
Buffalo County	Feb. 1-Feb. 28	11		
Chippewa County	Jan. 1-Feb. 28	16		
Clark County	do	4		
Columbia County	do	1		
Crawford County	Feb. 1-Feb. 28	1		
Dane County	Jan. 1-Feb. 28	2		
Douglas County	Jan. 1-May 1	102		
Dunn County	Jan. 1-Feb. 28	12		
Eau Claire County	do	36		
Fond du Lac County	May 12-May 18	1		
Forest County	Jan. 1-Feb. 28	7		
Grant County	do	7		
Iowa County	Feb. 1-Feb. 28	28	1	
Iron County	Jan. 1-Feb. 28	2		
Jefferson County	do	4		
La Crosse County	do	23		
Lafayette County	Feb. 1-Feb. 28	4		
Langlade County	Jan. 1-Feb. 28	71		
Lincoln County	do	1		
Marathon County	Jan. 1-May 4	18		
Marinette County	Feb. 1-Feb. 28	5		
Manitowoc County	do	1		
Marquette County	Jan. 1-Feb. 28	4		
Milwaukee County (Milwaukee).	Jan. 20-June 16	22	1	
Monroe County	Feb. 1-Feb. 28	2	1	
Oneida County	do	3		
Ontagamie County	do	8		
Portage County	Jan. 1-Feb. 28	9		
Price County	do	3	1	
Racine County	do	3		
Rock County	do	7		
St. Croix County	do	3		
Shawano County	Jan. 1-May 4	3		

Smallpox in the United States as reported to the Surgeon-General United States Marine-Hospital Service, December 29, 1900, to June 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Wisconsin—Continued:				
Sheboygan County	Jan. 1-Feb. 28	1		
Taylor County	......do	4		
Trempealeau County	......do	8		
Vilas County	Feb. 1-May 4	15		
Vernon County	Jan. 1-Feb. 28	3		
Waupaca County	......do	3		
Winnebago County	Feb. 1-Feb. 28	1		
Wood County	Jan. 1-Feb. 28	1		
Total of State		605	5	
Wyoming:				
Evanston	Dec. 31	2		
Green River	......do	1		
Rock Springs	......do	1		
Total for State		4		
Grand total		30,710	552	

FOREIGN AND INSULAR.

The reports from United States consuls in foreign countries are decidedly more regular and more numerous.

CHOLERA.

Cholera has been reported present in the following places: Argentina, Buenos Ayres; China, Hongkong; India, Bombay, Calcutta, Karachi and Madras; Russia, Novolievsk; and Straits Settlements, Singapore.

Nearly all the cases and deaths reported occurred in India, principally in Bombay.

From May 18, 1900, to May 21, 1901, there were 4,210 deaths in Bombay alone, and the majority of these (4,102) were reported from May 18 to November 20, 1900.

Cholera, as reported to the Surgeon-General United States Marine-Hospital Service.

JUNE 29, 1900, TO DECEMBER 28, 1900.

[Reports received from United States consuls through the Department of State and from other sources.]

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	June 17-June 23		1	On steamship Petrarch, from Saigon.
India:				
Bombay	May 18-Nov. 20		4,102	
Calcutta	Apr. 28-Nov. 17		810	
Karachi	July 2-Oct. 14		65	
Madras	May 19-Nov. 16		349	
Japan:				
Fukuoka Ken	Aug. 28		40	
Nagasaki	Sept. 11-Sept. 20	1		
Osaka	June 24-Aug. 25	3		
Yokohama	July 8-Sept. 8	4	3	
Russia:				
Novolievsk	Oct. 29			Several cases.
Straits Settlements:				
Singapore	June 17-Sept. 22		4	
	Oct. 28-Nov. 13	15	12	

Cholera, as reported to the Surgeon-General United States Marine-Hospital Service—Con.

DECEMBER 29, 1900, TO JUNE 28, 1901.

Places.	Date.	Cases.	Deaths.	Remaks.
Argentina:				
Buenos Ayres	Feb. 1–Feb. 28	2	....	
China:				
Hongkong	Mar. 9	....	7	
India:				
Bombay	Nov. 21–May 21	....	108	
Calcutta	Nov. 18–May 18	....	1,059	
Madras	Nov. 11–May 17	....	123	
Straits Settlements:				
Singapore	Nov. 8–Mar. 2	....	272	

YELLOW FEVER.

Yellow fever was reported in Brazil, Colombia, Costa Rica, Cuba, France (on steamship at Havre), Haiti, Jamaica, Mexico, Salvador, Santo Domingo, and West Africa.

Brazil, Cuba, and Mexico furnished a very large majority of the cases. In Cuba from July 1 to December 31, 1900, there were 1,279 cases with 298 deaths, a mortality of 23.3 per cent; from January 1 to June 30, 114 cases with 39 deaths, a mortality of 34.2 per cent.

Yellow fever as reported to the Surgeon-General United States Marine-Hospital Service.

JUNE 29, 1900, TO DECEMBER 28, 1900.

[Reports received from United States consuls through the Department of State and from other sources.]

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Avare	Feb. 1–Feb. 28	....	1	
Bahia	June 3–June 9	2	....	
Casa Branca	Feb. 1–July 31	....	8	
Itu	.....do	....	2	
Pedreiras	.....do	....	1	
Rio de Janeiro	May 12–Oct. 31	....	73	
Saboticabal	Mar. 1–Mar. 31	....	1	
Sao Paulo	Feb. 1–July 31	....	46	
Santos	.....do	....	112	
Sao Bernardo	Mar. 1–June 30	....	8	
Sorocaba	.....do	....	633	
Colombia:				
Barranquilla	June 3–Oct. 21	72	39	
Bocas del Toro	July 25–Sept. 11	5	3	
	Oct. 22–Nov. 17	5	....	
Cartagena	June 1–July 14	28	27	
	Sept. 1–Sept. 11	3	3	
	Oct. 29–Nov. 4	1	1	
Panama	June 12–Sept. 10	27	6	
Costa Rica:				
Port Limon	Aug. 18–Aug. 22	2	1	On steamship Holstein; 1 on steamship Canada.
	Oct. 31 Nov. 1	2	1	One on steamship Adler.
Cuba.				
Batabano	Aug. 16–Aug. 22	....	1	
	Dec. 3	1	....	
Cienfuegos	July 21	1	....	Among United States soldiers.
	Aug. 14–Sept. 22	5	3	
	Dec. 23	1	....	
Gibara	Oct. 13–Oct. 16	....	1	On steamship Julia.
Guanajay	June 30	....	1	
Havana	June 1–June 30	17	6	
	July 1–Aug. 1	96	30	
	Aug. 1–Aug. 31	254	49	
	Sept. 1–Sept. 30	358	52	
	Oct. 1–Oct. 31	308	74	
	Nov. 1–Nov. 30	214	54	
	Dec. 1–Dec. 15	....	12	
Matanzas	Nov. 7–Dec. 18	7	....	Two in barracks.
Neuvitas	Nov. 25	1	....	
Pinar del Rio	July 24–July 30	....	14	

Yellow fever, as reported to the Surgeon-General United States Marine Hospital Service—Con.

JUNE 29, 1900, TO DECEMBER 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Cuba—Continued.				
Puerto Padre	Dec. 3	1		On steamship Vixen.
Sagua, Isabela de	Sept. 17-Sept. 21	2	1	
	Nov. 2	1		
Santa Clara	June 20-July 22	12		
France:				
Havre	Aug. 9	1		On steamship Caravallas.
	Aug. 10	1		On steamship Santa Fe.
Mexico:				
City of Mexico	May 7-May 13		1	
	Oct. 8-Nov. 25		3	
Cordova	July 1			Yellow fever reported.
Merida	July 21	7	4	
Progreso	June 24-Sept. 30		9	
Tampico	July 28-Nov. 25		19	
Vera Cruz	Sept. 2-Dec. 14		113	
Santo Domingo:				
Puerto Plata	Oct. 6-Nov. 17	5	3	
West Africa:				
Goree-Dakar	Apr. 16-June 30	15	8	
Rufisque	June 16-June 30			Several cases.

YELLOW FEVER, DECEMBER 29, 1900, TO JUNE 28, 1901.

Brazil:				
Pernambuco	Feb. 14-Apr. 15		11	
Rio de Janeiro	Nov. 1-Apr. 30		168	
Colombia:				
Barranquilla	Apr. 3			Present.
Cartagena	Dec. 10-Jan. 14		6	
Honda	Jan. 7			Prevalent.
Guaduas	do			Do.
Costa Rica:				
Alajuela	June 7	1		
Liberia	May 25			Do.
Port Limon	Apr. 6	1		
Cuba:				
Cienfuegos	Jan. 1-Mar. 4	6	3	
Havana	Dec. 1-Dec. 31	62	21	
	Jan. 1-Jan. 31	24	7	
	Feb. 1-Feb. 28	8	6	
	Mar. 1-Mar. 16	4	1	
	Apr. 27-Apr. 29	2		
	Apr. 30-May 18	5		
	May 15	1		On steamship Matanzas from Tampico.
	June 5	1		
Matanzas	Dec. 19-Jan. 3	1	1	
Haiti:				
Cape Haitien	Mar. 24-Mar. 30	1	1	
Jamaica:				
Kingston	June 8	1		
Port Royal	Apr. 1			Present.
Mexico:				
City of Mexico	Jan. 28-Feb. 3		1	
Coatzacoalcos	Apr. 11			Prevalent.
Vera Cruz	Dec. 16-May 25		11	
Salvador:				
San Salvador	Mar. 21-June 20	5	3	

PLAGUE

This disease during the year has been reported in the following countries:

Africa, Cape Colony and Egypt; Arabia, Argentina, Australia, Brazil, China, England, Formosa, Germany, Hawaiian Islands, India, Japan, Madagascar, Mauritius, Paraguay, Philippine Islands, Portugal, Reunion, Russia, Scotland, Straits Settlements, Turkey, and Wales—probably a wider dissemination than has ever been known in the history of the world.

The large majority of the cases have occurred in India—more than in all the rest of the world combined. From April 29 to November 3, 1900, 28,865 cases were reported, with 21,954 deaths. During the next six months—from November 4, 1900, to May 11, 1901—there were 506,395 cases, with 446,923 deaths, or for the period from April 29, 1900, to May 11, 1901, there were 535,260 cases and 468,877 deaths.

These figures are only approximately correct, as no doubt many cases are not reported.

Plague, as reported to the Surgeon-General United States Marine-Hospital Service.

JUNE 29, 1900, to DECEMBER 28, 1900.

[Reports received from United States consuls through the Department of State and from other sources.]

Places.	Date.	Cases.	Deaths.	Remarks.
Africa:				
Cape Colony, King Williams Town	Nov. 16	8	3	
Arabia:				
Aden	Feb. 22–July 3	714	575	
Djiddah	Apr. 26–June 28	....	78	
Yambo	Apr. 10–June 13	....	67	
Argentina:				
Buenos Ayres	May 1–May 31	5	5	
Australia:				
Adelaide	Apr. 1–Aug. 11	6	3	
Brisbane	Aug. 1–Aug. 31	....	3	
Chartus Towers	Sept. 29	1		
Sydney	Jan. 24–Aug. 25	303	103	
Brazil:				
Campo Grande	June 16	2	....	
Nietheroy	do	2	....	
Petropolis	Dec. 10	....	1	
Rio de Janeiro	Apr. 18–Sept. 30	485	243	
	Oct. 1–Oct. 31	33	20	
China:				
Amoy	May 27–Sept. 1	....	1,445	Estimated.
Hongkong	Jan. 1–Oct. 27	1,084	1,019	
Egypt:				
Port Said	Apr. 20–Aug. 3	94	38	
Alexandria	May 16–Oct. 16	34	23	
	Nov. 11	2	1	
England:				
London	Aug. 3	4	2	
Formosa	Apr. 1–May 31	640	458	
	June 1–July 31	203	165	
Tamsui	Aug. 1–Aug. 31	4	3	
Germany:				
Bremen	Sept. 27–Nov. 5	1	1	On a steamship from Buenos Ayres.
India:				
Bombay Presidency and Sind:				
Ahmedabad city	Apr. 29–Nov. 3	22	21	
Ahmednagar district	do	15	11	
Aundh state	do	7	6	
Belgaum district	do	2,664	1,671	
Bombay city	do	3,622	2,490	
Dharwar district and town.	do	653	494	
Nasik district	do	1,120	965	
Poona city	do	3,619	2,986	
Poona district	do	234	177	
Satara district	do	43	30	
Satara town	do	11	4	
Surat district	do	181	41	
Surat town	do	6	6	
Thana district	do	817	700	
Belgaum town	do	552	416	
Kanara district	do	59	56	
Kolaba district	do	76	46	
Ratnagiri district	do	22	18	
Savantvadi state	do	....	3	
Hyderabad town	do	3	3	
Karachi city	do	....	472	
Baroda state	do	....	3	
Cutch state	do	413	239	
Mandir town	do	112	97	
Khandish	do	3	1	
Kathiawar state	do	177	111	

Plague, as reported to the Surgeon-General United States Marine-Hospital Service—Con.

JUNE 29, 1900, to DECEMBER 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Bombay Presidency and Sind—Continued.				
Bhavnagar town	Apr. 29-Nov. 3	26	13	
Kolhapur and Southern Mahratta Country.	do	680	523	
Sachin state	do	2		
Savanur state	do	69	48	
Janjira state	do	146	137	
Outside Bombay Presidency and Sind:				
Madras city	do	4	3	
Salem district	do	119	81	
Tinnevelly district	do	5	3	
Bellory district	do	1		
Chingleput district	do	1	1	
Trichinopoly district	do		1	
North Arcot district	do	7	6	
Calcutta	do	2,258	2,237	
Bankura district	do	12	11	
Midnapore district	do	1	1	
Gaya district	do	152	152	
Hooghly district	do	14	12	
Howrah town	do	71	63	
24-Parganas district	do	24	19	
Monghyr district	do	95	85	
Monghyr town	do	161	130	
Saran district	do	245	193	
Chapra town	do	265	211	
Patna district	do	984	837	
Patna city	do	26	22	
Dinapur town	do	76	70	
Bihar town	do	158	153	
Cuttach district	do	3	2	
Jullundur district	do	85	49	
Hoshiarpur district	do	27	9	
Nagpur city	do	22	21	
Nagpur district	do	2		
Bangalore Civil and Military Station and city.	do	2,818	1,355	
Mysore city	do	4,435	3,340	
Mysore district	do	1,062	786	
Kolar Gold Fields	do	97	69	
Tumkar district	do	94	98	
Lingsuagur district	do	60	59	
Gulburga district	do	1	1	
Shimoga district	do	118	83	
Japan.				
Kobe	Oct. 16-Oct. 27	3	1	
Nagasaki	June 6	1	1	Taken from a vessel from the Goto Islands.
Osaka	Apr. 8-July 16	47	38	
	Sept. 11-Sept. 27	25	20	
	Oct. 9-Nov. 27	22	19	
Sakai	June 30	1		
Shidzuoka Ken	May 6-July 7	16	13	
Madagascar:				
Antananarivo	Oct. 16			Plague reported.
Tamatave	Sept. 17-Oct. 29	8	6	
Mauritius:				
Port Louis	Aug. 15-Nov. 8	71	51	
Paraguay:				
Asuncion	July 24-July 31	12	2	
Philippine Islands:				
Cavite	June 17-June 23	1		
Cebu	July 25	1		
Manila	Jan. 1-Nov. 10	225	150	
Portugal:				
Oporto	June 23	1		
Scotland.				
Glasgow	Aug. 31-Oct. 6	28	8	
Govan	Sept. 4	1	1	
Straits Settlements.				
Penang	Oct. 8		2	
Turkey:				
Beirut	July 20	4		
Constantinople	Aug. 27	1		On steamship Niger from the Island of Syros.
Smyrna	June 18-Aug. 6	22	11	
Wales:				
Llandaff	Oct. 4	1	1	From Rosario.

Plague, as reported to the Surgeon-General United States Marine-Hospital Service—Con.

DECEMBER 29, 1900, TO JUNE 28, 1901.

Places.	Date.	Cases.	Deaths.	Remarks.
Africa:				
Cape Town	Feb. 16–June 8	700	326	
Argentina:				
Buenos Ayres	Dec. 1–Feb. 28	3	1	
Australia:				
Adelaide	Feb. 28	1	....	
Brisbane	Mar. 4	2	....	
Sydney	do	1	1	On transport Antillion.
Brazil:				
Nictheroy	Dec. 6–Jan. 10	12	8	
Rio de Janeiro	Nov. 1–Feb. 28	....	44	
Petropolis	Nov. 12–Feb. 9	6	3	
China:				
Amoy	Apr. 30	....	....	Reported.
Canton	Mar. 1–May 22	....	....	Prevailing.
Chan Tsin	Feb. 11–Feb. 28	....	280	
Fatshan	Feb. 28	....	....	Prevalent.
Hongkong	Jan. 1–May 11	411	372	
Lam Ko District	Feb. 14–Mar. 26	....	10,000	
Egypt:				
Alexandria	Apr. 10	....	1	
Minieh	June 3	1	....	
Zagazig	June 15	18	....	
England:				
Hull	Jan. 8–Jan. 31	....	8	On steamship Friary.
Southampton	Mar. 21	1	....	On steamship Simla.
Formosa:				
Taichu Division	Apr. 17–Apr. 28	13	3	
Taihoku Division	Apr. 21–Apr. 27	13	9	
Tainan Division	Dec. 31–Jan. 6	28	22	
	Apr. 21–May 4	144	98	
Tamsni	Feb. 28–Mar. 31	274	205	
Hawaiian Islands:				
Honolnlu	Mar. 29	....	1	
India:				
Bombay Presidency and Sind:				
Northern Division—				
Ahmedabad City	Nov. 4–May 11	4	2	
Ahmedabad District	do	176	140	
Bombay City	do	13,039	9,843	
Broach District	do	4	1	
Dhulia Town	do	271	219	
Khandesh District	do	342	211	
Surat District	do	611	398	
Surat Town	do	43	36	
Thana District	do	1,876	1.641	
Central Division—				
Ahmednagar District	do	....	....	
Ahmednagar Town	do	2	1	
Nasik District	do	71	49	
Nasik Town	do	123	99	
Poona City	do	878	887	
Poona District	do	266	219	
Satara District	do	111	78	
Satara Town	do	175	66	
Southern Division—				
Belgaum District	do	4,639	3,520	
Belgaum Town	do	92	57	
Dharwar District	do	859	744	
Dharwar Town	do	450	351	
Hubli Town	do	12	11	
Kanara District	do	61	44	
Karachi City	do	2,557	2,069	
Kolaba District	do	289	248	
Ratnagiri District	do	88	65	
Political Charges—				
Aundh State	do	8	4	
Baroda State	do	436	358	
Bhavnagar Town	do	560	298	
Cutch State	do	212	192	
Janjira State	do	274	232	
Kathiawar State	do	207	122	
Kolhapur and Southern Mahratta country.	do	829	620	
Mandvi Town	do	820	652	
Miraj Town	do	822	567	
Savanur State	do	52	41	

Plague, as reported to the Surgeon-General United States Marine Hospital Service—Con.

JUNE 29, 1900 to DECEMBER 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Outside Bombay Presidency and Sind:				
Madras Presidency—				
Malabar District	Nov. 4–May 11	2		
Madras City	do	6	3	
North Arcot	do	37	25	
Salem District	do	1,109	803	
South Canara	do	1	1	
Tinnevelly	do	1		
Trichonopoly District	do	1		
Bengal:				
Calcutta	do	7,027	6,034	
Burdwan Division	do	267	223	
Bhagalpur Division	do	5,087	4,640	
Chita Nagpur Division.	do	657	581	
Orissa Division	do	33	76	
Patna Division	do	44,208	394,851	
Presidency Division	do	68	62	
Northwest Province and Oudh—				
Allahabad Division	do	641	603	
Benares District	do	4,258	4,189	
Punjab Province—				
Amritsor Division	do	728	427	
Jullundur Division	do	2,611	1,098	
Kapurthala	do	286	234	
Lahore	do	169	104	
Patiala State	do	142	117	
Sialkot Division	do	1,354	1,014	
Mysore State—				
Bangalore City	do	1,586	1,183	
Bangalore Civil and Military Station.	do	2,229	1,801	
Bangalore District	do	1,284	932	
Kolar Gold Fields	do	630	1,095	
Mysore City	do	1,002	683	
Mysore District	do	1,758	1,349	
Shimoga	do	493	133	
Tumkar District	do	23	18	
Kadur District	do	20	18	
Hyderabad State—				
Aurangabad District	do	128	108	
Rajputana—				
Kashmir	do	158	116	
Marwar State	do	130	88	
Japan:				
Fukuoka	Dec. 1–Feb. 8	1	1	
Hiroshima	do	1	1	
Kobe and Hiogo	do	26	22	
Nagasaki	do	1	1	
	Apr. 17		1	On steamship Taichu Maru.
Osaka	Dec. 1–Feb. 8	157	139	
Shidzuoka	do	20	20	
Wakayama	do	18	13	
	Apr. 11		1	
Madagascar:				
Tamatave	Nov. 19–Nov. 30	1		
Mauritius	Feb. 15–May 18		45	
Philippine Islands:				
Cavite	Apr. 27	1		
Cebu	Apr. 4–Apr. 13	2	1	
Manila	Dec. 30–May 11	237	178	
Santa Rosa	Apr. 27	1		
Réunion	Jan. 3–Feb. 15	12	5	
Russia:				
Samara	Dec. 23–Jan. 10	61	44	
Tsarevsk District	Nov. 17–Dec. 22		24	
Uralsk	Jan. 21	136	134	
Vladimirovka	Jan. 1–Jan. 24	25	16	
Straits Settlements:				
Singapore	Dec. 25		1	From steamship Hong Wan.
	Jan. 12–Mar. 23		27	
Turkey:				
Basra	May 4	3		
Bera	May 3	1		
Constantinople	Jan. 10	1	1	
Smyrna	Jan. 9		13	
Wales:				
Cardiff	Feb. 8		1	

SMALLPOX.

Smallpox was reported from almost every country on the globe. It was especially prevalent in India, Russia, Brazil, Spain, and Syria, 5,444 deaths, approximately, having been reported during the year.

Smallpox as reported to the Surgeon-General United States Marine-Hospital Service.

JUNE 29, 1900, TO DECEMBER 28, 1900.

[Reports received from United States consuls through the Department of State and from other sources.]

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	May 1-May 31		3	
Argentina:				
Buenos Ayres	Apr. 1-Sept. 30		19	
Australia:				
Sydney	June 2	264	92	
Austria:				
Prague	June 3-Dec. 1	175		
Trieste	Oct. 7-Oct. 13	1		
Belgium:				
Antwerp	June 24-Nov. 3	12	4	
Brussels	July 1-July 7		1	
Ghent	Aug. 5-Sept. 15		4	
British Columbia:				
Gabriola Island	Nov. 21	1		
Nanaimo	Nov. 23	13		
Brazil:				
Pernambuco	July 1-Nov. 15		67	
Rio de Janeiro	May 12-Oct. 31		186	
China:				
Amoy	Apr. 14-May 12			A few cases.
Hongkong	May 20-June 9	2		
Cos	Apr. 1		235	
Colombia:				
Barranquilla	June 24-June 30		1	
Costa Rica:				
Port Limon	Aug. 8	1		
Cuba:				
Manzanillo	July 29-Aug. 6	2		
Ecuador:				
Guayaquil	Sept. 1-Nov. 17		73	
Egypt:				
Alexandria	Aug. 28-Nov. 27	5	1	
Cairo	May 21-Nov. 18		22	
England:				
Liverpool	June 10-Dec. 1	46	7	
London	do	102	1	
Manchester	June 10-Nov. 10	1		
Southampton	do	9		
Sunderland	Nov. 25-Dec. 1	1		
West Hartlepool	Sept. 30-Dec. 1	9		
Formosa	Apr. 1-Aug. 31	237	128	
France:				
Bordeaux	May 1-June 30		4	
Lyons	June 3-Sept. 1		15	
Marseilles	July 1-Aug. 31		14	
Nice	June 6-June 30	1		
Paris	June 17-Dec. 1		136	
St. Etienne	June 1-Oct. 31	32	7	
Germany:				
Berlin	Aug. 10	3		
Frankfort-on-the-Main	June 10-July 20		4	
Königsberg	July 1-Sept. 15	4	1	
Solingen	Oct. 14-Oct. 20	1		
Gibraltar	July 2-Nov. 25		4	
Greece:				
Athens	June 10-Dec. 1	29	15	
India:				
Bombay	May 18-Oct. 30		100	
Calcutta	Apr. 19-May 5		41	
	June 24-Nov. 17		168	
Karachi	May 10-Oct. 20		47	
Madras	May 26-Nov. 9		13	
Italy:				
Genoa	June 10-June 16	3		
Naples	Oct. 17-Nov. 14	17	1	
Japan:				
Nagasaki	May 21-Oct. 20	4		
Osaka and Hiogo	June 3-June 9	1		

Smallpox as reported to the Surgeon-General United States Marine-Hospital Service—Con.

JUNE 29, 1900, TO DECEMBER 28, 1900—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Korea:				
Seoul	May 20–May 26			Endemic.
Malta:				
Valetta	May 1–July 15	24	3	
Mexico:				
Chihuahua	May 27–July 7		6	
City of Mexico	May 6–Dec. 2	245	173	
Merida	July 21			Smallpox reported.
Progreso	Dec. 9–Dec. 15	3		
Tuxpan	Nov. 21–Dec. 10		7	
Vera Cruz	June 17–Nov. 24		67	
Netherlands:				
Rotterdam	July 22–July 28	1		
Ontario:				
Port Arthur	June 1–June 27	2	1	
Philippine Islands:				
Guimeras Island	July 1		18	
Iloilo	July 1–July 31		1	
Manila	Jan. 1–Sept. 8	35	1	
Quebec:				
Compton County	May 12–June 23	1		
Gaspe County	May 20–June 23	1		
Hochelaga County	May 6–Aug. 15	2	1	
Iberville County	July 26–Aug. 27	2		
Montreal County	Apr. 22–Aug. 31	28	10	
Quebec County	Apr. 15–June 23	8		
Rimouski County	Feb. 3–July 31	129		
Russia:				
Moscow	May 27–Nov. 24	122	35	
Odessa	June 3–Dec. 1	199	56	
Riga	Apr. 1–Sept. 30		60	
St. Petersburg	June 10–Nov. 24	663	190	
Vladivostock	Apr. 1–Sept. 30	12		
Warsaw	May 27–Dec. 1		264	
Scotland:				
Dundee	Aug. 25–Sept. 29	3		
Edinburgh	Sept. 9–Oct. 27	4		
Glasgow	June 16–Nov. 23	83	11	
Spain:				
Barcelona	Aug. 19–Nov. 11		102	
Cadiz	Oct. 1–Oct. 31		1	
Corunna	July 15–Nov. 24		6	
Madrid	May 20–Sept. 1		257	
Valencia	Nov. 4–Nov. 18	1		
Straits Settlements:				
Singapore	May 11–July 7		10	
Switzerland:				
Geneva	June 10–Aug. 11	10		
Zurich	June 24–Aug. 11	2		
Uruguay:				
Montevideo	May 20–May 26	1		
Yukon Territory:				
Dawson	July 20–Sept. 26	11		

DECEMBER 29, 1900, TO JUNE 28, 1901.

Argentina:			
Buenos Ayres	Oct. 1–Mar. 31		213
Montevideo	Nov. 24–Dec. 1	1	
Austria-Hungary:			
Prague	Dec. 2–June 1	227	
Trieste	Mar. 3–Mar. 9	2	
Vienna	Feb. 17–23		1
Bahama Islands:			
Inagua	Jan. 1–Jan. 28	1	
Belgium:			
Antwerp	Dec. 30–June 1	48	8
Ghent	Jan. 20–Mar. 16		2
Liege	Dec. 16–Dec. 22		1
Brazil:			
Bahia	Jan. 20–Jan. 26	3	
Ceara	Jan. 1–Apr. 30		1
Pernambuco	Dec. 1–Apr. 15		232
Rio de Janeiro	Oct. 1–Apr. 30		255
British Columbia:			
Nanaimo	Dec. 21	5	
Vancouver	Dec. 1–Jan. 31	4	

Smallpox as reported to the Surgeon-General United States Marine-Hospital Service—Con.

DECEMBER 29, 1900, TO JUNE 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Manitoba—				
Winnipeg	May 12-June 1	9		
Ontario—				
Algoma County	Jan. 1-May 13	96		
Carleton County	do	1		
Glengary County	May 6	1		
Haldimand County	Jan. 1-May 13	1		
Huron County	do	1		
Lennox County	do	1		
Middlesex County	do	6		
Monitoulin County	do	1		
Muskoka County	do	3		
Nipissing County	May 11	21		
Norfolk County	Jan. 1-May 13	1		
Northumberland County	do	1		
Oxford County	May 6	2		
Rainy River County	May 10	1		
Renfrew County	Jan. 1-May 13	17		
Simcoe County	do	4		
Thunder Bay County	do	11		
Victoria County	May 12-May 11	4		
Waterloo County	May 12	2		
Wentworth County	May 25-June 1	11		
York County	Jan. 1-May 13	1		
Quebec—				
Beauharnois County	May 27	3		
Brome County	do	12		
Chateauguay County	Apr. 5-May 14	1		
Huntingdon County	Mar. 25-May 14	1		
Iberville County	May 11-May 11	4		
Jacques-Cartier County	May 27	1		
La Prairie County	Feb. 10-May 14	16	1	
Matane County	Mar. 25-May 27	17		
Missisquoi County	Mar. 24-May 27	65		
Montreal County	Apr. 20-May 27	6		
Napierville County	Jan. 9-May 14	22	1	
Ottawa County	Mar. 3-May 14	5		
Pontiac County	Feb. 11-May 27	18		
Rimouski County	Feb. 10-May 11	1		
St. Hyacinthe County	May 27	1		
Shefford County	do	1		
Terrebonne County	Apr. 15-May 27	55		
Ceylon:				
Colombo	Jan. 6-May 11		12	
China:				
Amoy	Sept. 8-Apr. 22			Present.
Hongkong	Dec. 2-May 11	78	56	
Colombia:				
Grenada	May 16			Prevalent.
Maragua	do			Do.
Masaya	do			Do.
Panama	Apr. 9-June 17	40	7	
Cuba:				
Banes	Jan. 25	2		
Jucaro	June 6	2		
Ecuador:				
Guayaquil	Nov. 18-Mar. 23		59	
Egypt:				
Alexandria	Nov. 27-Dec. 31	8	7	
Cairo	Jan. 1-May 14		14	
England:				
Bradford	Dec. 16-May 18	52		
Hebburn-upon-Tyne	Apr. 6-May 7	16	2	
Leeds	Dec. 30-Apr. 20	3		
Liverpool	Feb. 3-June 8	13	4	
London	Dec. 2-June 14	21	2	
Newcastle-upon-Tyne	Jan. 6-May 18	47	1	
Sheffield	Apr. 14-Apr. 20	1		
Southampton	Mar. 10-Apr. 13	5		
West Hartlepool	Dec. 9-Dec. 15	1		
Formosa:				
Tamsui	Feb. 1-Mar. 31	71	2	
France:				
Marseille	Dec. 1-Apr. 30		15	
Nantes	Feb. 1-Apr. 30	2		
Paris	Dec. 2-June 8		284	
Rheims	Mar. 4-Apr. 15		1	
Roubaix	Jan. 1-Jan. 31		1	
St. Etienne	Jan. 1-May 30	6		

Smallpox as reported to the Surgeon-General United States Marine-Hospital Service—Con.

DECEMBER 29, 1900, TO JUNE 28, 1901—Continued.

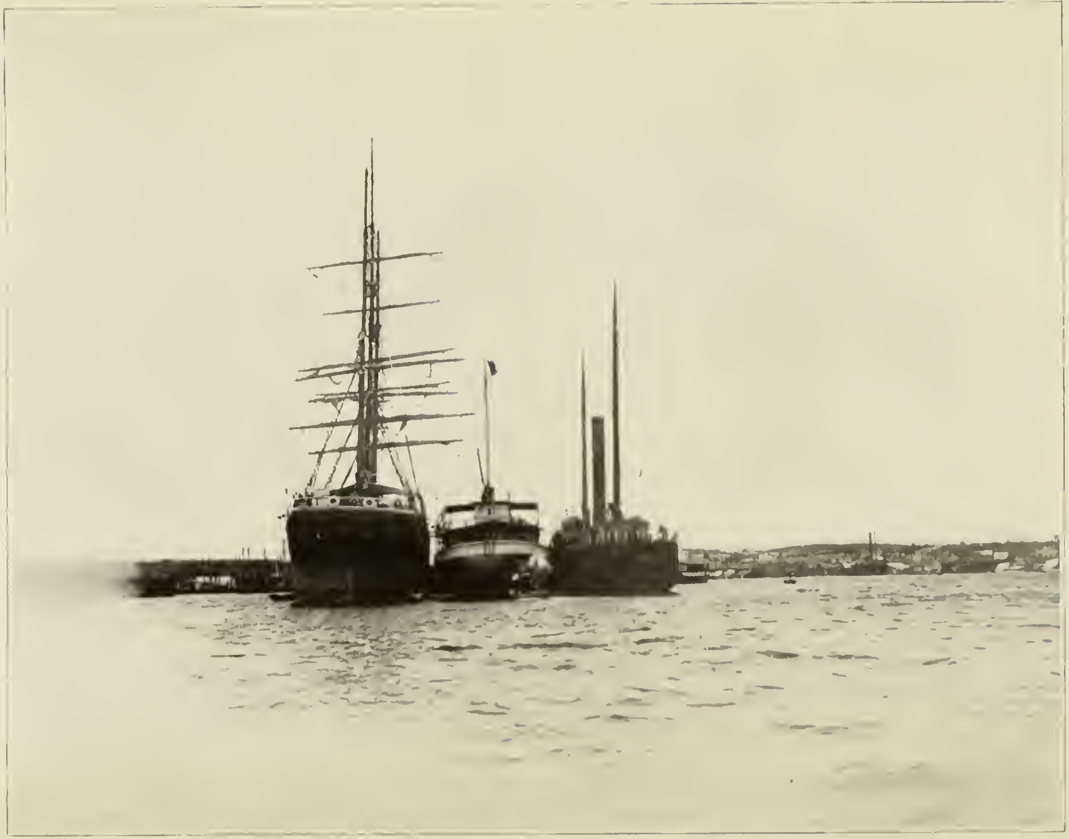
Places.	Date.	Cases.	Deaths.	Remarks.
Germany:				
Bremen	Apr. 14–Apr. 20	1		
Leipzig	Feb. 17–Feb. 23		1	
Gibraltar	Dec. 17–June 2	3		
Greece:				
Athens	Dec. 2–June 8	8	1	
Hawaiian Islands:				
Kauai	Apr. 23–May 6	2		
India:				
Bombay	Nov. 21–May 21		106	
Calcutta	Nov. 18–May 18		1,930	
Karachi	Dec. 3–May 19	395	78	
Madras	Nov. 17–May 17		113	
Ireland:				
Belfast	May 18	5	1	
Italy:				
Licata	Dec. 9–Dec. 15		2	
Messina	Mar. 30–June 8	17	2	On steamship Mariner.
Milan	Apr. 30	1		
Naples	Jan. 20–June 9	916	176	
Japan:				
Nagasaki	May 6	2		
Tokyo	do	3		
Yokohama	Feb. 17–Mar. 16	2		
Korea:				
Seoul	Dec. 1–Jan. 1			Reported present.
Malta:				
Valetta	Dec. 16–May 11	11	1	
Mexico:				
City of Mexico	Dec. 16–June 8		13	
Merida	Dec. 20–Feb. 28			Epidemic.
Nuevo Laredo	Apr. 20		1	
Progreso	Feb. 2–Apr. 5	36		
Tuxpam	Dec. 11–Mar. 4		7	
Vera Cruz	Dec. 16–May 25		5	
New Brunswick:				
Gloucester and Westmoreland counties.	Feb. 9	150		
Netherlands:				
Rotterdam	Feb. 10–Apr. 20	5		Imported.
Nova Scotia:				
Kentville	Apr. 10	2		
Philippine Islands:				
Cebu	Mar. 9–Apr. 27	6	1	
Iloilo	Apr. 27	1	1	
Manila	Jan. 6–May 11	80		
Porto Rico:				
Aguas Buenas	Feb. 1–Apr. 10	6		24 cases in the island.
Bayamon	do	2		
Caguas	do	2		
Ciales	do	21		
Isabela	Mar. 5–Apr. 10	4		
Manati	do	1		
Morovis	Feb. 1–Apr. 10	2		
Piedras	do	2		
Ponce	Mar. 16–June 8	181	1	
Quebradillas	Feb. 1–Apr. 10	4		
Rio Piedras	do	1		
San Juan	do	13		
Russia:				
Moscow	Nov. 24–May 25	158	38	
Odessa	Apr. 1–June 1	420	92	
Riga	Oct. 1–Dec. 31		27	
St. Petersburg	Apr. 1–June 1	190	39	
Vladivostok	Jan. 1–Jan. 31	2		
Warsaw	Dec. 2–May 25		173	
Scotland:				
Dundee	Jan. 27–May 11	32		
Edinburgh	Dec. 30–Mar. 2	3		
Glasgow	Dec. 8–June 8		234	
Leith	Dec. 30–Apr. 12	2		
Sicily:				
Catania	Apr. 13			Prevalent.
Spain:				
Barcelona	Jan. 1–Mar. 3		253	
Corunna	Feb. 24–June 8		5	
Malaga	Mar. 8–June 1		7	
Valencia	Mar 1–Mar. 14		1	
Vigo	Mar. 1–Mar. 31		1	

Smallpox as reported to the Surgeon-General United States Marine-Hospital Service—Con.

DECEMBER 29, 1900, TO JUNE 28, 1901—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Straits Settlements:				
Singapore	Nov. 24-May 6		11	
Switzerland:				
Geneva	Mar. 3-May 25	10		
Syria:				
Beirut	May 25			Present.
Jerusalem	Aug. 2-Feb. 5	1,500	500	
Turkey:				
Smyrna	Apr. 8-Apr. 14		1	
Uruguay:				
Montevideo	Mar. 17-Mar. 23	5		

DIVISION OF INSULAR AND FOREIGN QUARANTINE AND IMMIGRATION.



U. S. DISINFECTING STEAMER SANATOR. SIMULTANEOUS DISINFECTION OF RUSSIAN BARK WOLFF AND AMERICAN STEAMER FANITA, HABANA HARBOR, 1901.

REPORT OF THE DIVISION OF INSULAR AND FOREIGN QUARANTINE AND IMMIGRATION.

By R. M. Woodward,
Surgeon, U. S. Marine-Hospital Service, in Charge.

Cuba.

The quarantine system of Cuba is under the supervision of a chief quarantine officer for Cuba, located at Habana, who also has charge of the quarantine measures enforced at that port.

Outside of Habana the principal ports where maritime quarantine is conducted are Matanzas, Nuevitas, Santiago, and Cienfuegos. In addition to these, there are inspection stations at 14 smaller ports.

FLOATING DISINFECTING PLANTS.

In addition to the *Sanator* at Habana, and the *Rough Rider* at Santiago, the Service has established a fully equipped floating plant, the *Guardian*, at Matanzas, and a similar plant, the *Sentinel*, at Cienfuegos. A plant for Nuevitas is now nearing completion at the port of Habana.

REPORT OF CHIEF QUARANTINE OFFICER—HABANA AND SUBPORTS.

General Report on Quarantine Conditions in the Island of Cuba, including Report of Transactions at the Port of Habana and Subports of the First Quarantine District of Cuba for the Fiscal Year ended June 30, 1901; also Supplemental Report of Transactions to September 15, 1901, inclusive.

Marine-Hospital Service, Office of Medical Officer in Command,
Habana, September 5, 1901.

Sir: The following report of the transactions of the quarantine service on the island of Cuba is submitted for the fiscal year 1901:

The quarantine officer at Habana having been designated as chief quarantine officer for the island, to date from July 15, 1900, a greater degree of efficiency and economy has been attained at the various ports of entry. The coast line is divided geographically into five quarantine districts, as follows:

First district.—Habana, with subport of Batabano and the Mariel quarantine detention station.

Second district.—The north coast of the provinces of Matanzas and Santa Clara, embracing the ports of Matanzas, Cardenas, Isabela de Sagua, and Caibarien.

Third district.—All the north and northeast coast of Principe and Santiago, from Nuevitas to Cape Maysi, embracing the ports of Nuevitas, Puerto Padre, Gibara, Banes, Mayari, and Baracoa.

Fourth district.—South coast of Santiago de Cuba from Cape Maysi to Manzanillo, including the ports of Santiago de Cuba, Guantanamo (Caimanera), and Manzanillo.

Fifth district.—South coast of Puerto Principe and Santa Clara, with the ports of Cienfuegos, Casilda (Trinidad), Jucaro, Tunas de Zaza (Sancti Spiritus), and Santa Cruz del Sur.

Twenty-nine quarantine officers are stationed at the various ports, of whom 21 are Cuban physicians, selected men, in training for practical quarantine work. Each of the five districts is in command of an experienced officer, to whom reports are made from the subports, and, in turn, by him to the chief quarantine officer at Habana.

The duties of all these quarantine officers have been admirably performed during the year, in the inspection of incoming and outgoing vessels, passengers, crews, and the issue of bills of health. A particular degree of efficiency has been observed in the prompt sanitary information furnished as to the health conditions prevailing in all the seacoast cities and towns.

In some cases the Cuban quarantine officer also acts as city health officer, in the smaller places to great advantage.

In a number of instances quick instructions were issued from this office for the investigation of rumors of cases of smallpox and yellow fever, especially along the south coast of the island.

The modern system of carrying out the purification of vessels and cargoes has been provided for in Cuba by the location, at central points, of disinfecting barges equipped with the latest, most improved machinery. The first of these, the *Rough Rider*, was placed in operation at Santiago de Cuba in 1898. Habana Harbor was supplied by the U. S. barge *Protector*, and afterwards the *Sanator*, also the property of the United States and lent to the island as being the best equipment for the great number of vessels asking for disinfection. During the year two of these barges, the *Guardian* and the *Sentinel*, were fitted out in Philadelphia and towed to Matanzas and Cienfuegos, respectively. A substantial hull, the *Susana*, was purchased in Habana Harbor and the latest machinery installed on her by the quarantine force. This barge is now completed and will shortly be towed to Nuevitas, thus equipping each of the quarantine districts with a floating disinfection plant.

FLOATING DISINFECTING PLANTS A COMMERCIAL BENEFIT.

The advantage of these floating plants has been practically demonstrated during the year. This is particularly shown in the disinfection of cattle steamers at ports on the north coast of Cuba immediately prior to departure for Gulf ports in the United States. The period of incubation, of yellow fever particularly, is then practically undergone at sea, and if the crew be immune the vessel is admitted without delay at the State quarantine stations. Confidence in the practical application of quarantine in the island of Cuba is now established with the health officers of the United States and certificates of health and immunity of passengers, vessels, and crews are generally accepted. Recently all the Florida State quarantine stations have been turned over to the control of the United States Government, and this is a distinct advantage to the island of Cuba in the recognition of her sanitary evolution.

SCHOOL FOR INSTRUCTION IN PRACTICAL QUARANTINE WORK.

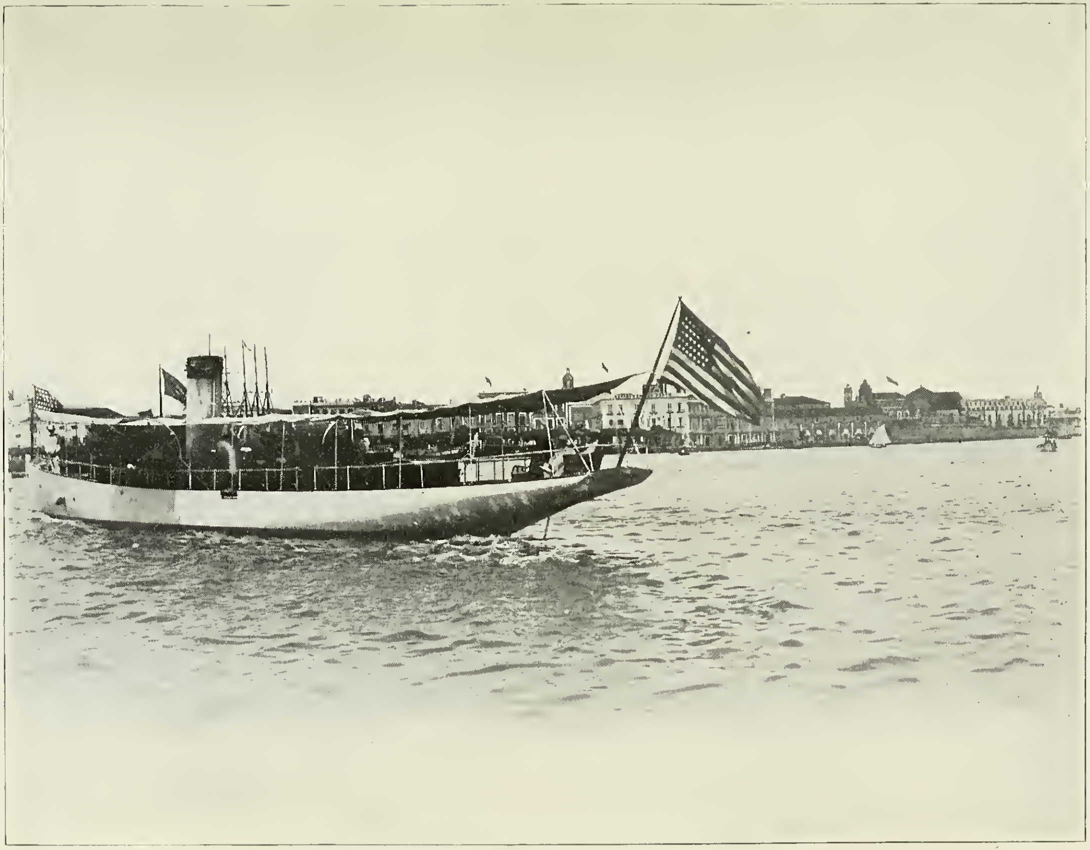
While quarantine procedures were understood theoretically during the Spanish régime, it has been noticed that the practical application was very faulty, causing a great lack of confidence in other countries and the imposition of sanitary restrictions in self-defense. The present Cuban quarantine officers are far above the average that formerly prevailed; and as the opportunity affords they are ordered to Habana for thirty days' instruction in the practical operations of the Service, the care necessary in the issue of immune certificates, and particularly the operation of modern disinfecting machinery.

IMMUNE CERTIFICATES.

For the past twenty years, during which time the Marine-Hospital Service maintained a sanitary inspector at Habana, the question of immunity to yellow fever has been a vexatious one. Certificates are issued only upon reliable evidence and as an accommodation to travelers. To the average native, regulations, most especially in the quarantine service, are obnoxious and indifferently understood; but so long as uninfected seaports in Cuba, Porto Rico, or the United States indicate under what sanitary conditions passengers may enter their gates without detention these rules will be maintained, and the white certificates issued as an accommodation, not as a right.

BOARDING FACILITIES.

The steam launches provided at the larger ports for the boarding officers have been maintained in good condition and efficiency at very reasonable expense. The inspec-



QUARANTINE STEAMER FESSENDEN, HABANA HARBOR, 1901.

tion of incoming and outgoing vessels in Habana Harbor is very great, and two launches are kept constantly going from sunrise to sunset. In addition, a guard is transferred to and maintained upon the Florida steamer during her stay in the harbor. Each member of the crew of this vessel is required to be an immune in order to expedite United States mail and express matter. An additional steam launch is urgently required, and plans and specifications are now under consideration by the Bureau for its construction in New York, one of the two now in service being temporarily under charter.

QUARANTINABLE DISEASES.

Upon assuming charge of the quarantine service, July 15, 1900, I found that certain vessels, particularly those laden with tasajo, or jerked beef, from Argentina and Uruguay, where plague was reported, were detained outside the harbor for inspection and remanded to other places for disinfection. . As the danger decreased these rules were modified. Considerable opposition was met from the consular authorities of the countries interested, but the quarantine procedures were relaxed only when proper assurances of safety from plague were given.

The French steamer *La Navarre* arrived October 4, 1900, from Spanish ports with a case of smallpox in the steerage. All unprotected persons were vaccinated, and the exposed passengers, over four hundred in number, detained at the Mariel quarantine station for observation. No further cases developed. The barracks at Mariel were erected a number of years ago by the Spanish authorities, during a threatened invasion of cholera. They are commodious, substantial in construction, and the equal of any similar station in the United States. Considerable repairs have been made this season by the quarantine force, modern furniture supplied, in the way of woven wire double-deck cots, etc., also bathtubs, showers, flush closets, plumbing material, and steam pump for the distribution of fresh and salt water.

Nonimmune passengers arriving from Mexican and other infected ports are now detained to complete the five-day period of observation for yellow fever, counting the time from ports of departure. This, together with the prompt removal of all suspicious cases of fever occurring among passengers from these places, has strengthened outside confidence in the improved sanitary condition of Cuba so far as the coast line and water quarantine are concerned.

INTERIOR SANITATION OF THE ISLAND OF CUBA.

It may not be out of place to state as a matter of fact that the majority of inland cities and towns of the island are in a lamentable sanitary condition. This applies particularly to all places upon the lines of railways leading from the city of Habana to the provinces of Pinar del Rio, Habana, Matanzas, and Santa Clara. In the other provinces better sanitary conditions prevail, particularly where United States troops were garrisoned, who cleaned up and maintained fair hygienic conditions from fear and in self-defense.

Along the lines of railways in the western provinces numerous large and small towns are located within a few hours' travel of the city of Habana whose filthy condition is indescribable. Many of these are the centers of cigar factories, causing the assemblage of nonimmunes, who, when taken sick, are hurried to the city of Habana and possibly admitted to one of the numerous quintas, or Spanish subscription hospitals. During the considerable prevalence of yellow fever in the summer and fall of 1900 few, if any, cases were reported in any of these towns, because they are not compelled by law to do so, and also because of the fear that if the disease is known to be present a campaign of cleaning up might be inaugurated, as they had heard was being done in Habana.

VIOLATION OF QUARANTINE LAWS AND REGULATIONS.

A regulation was made by this office that only the United States consular and supplementary bills of health should be issued at the various ports of the island. This order was necessary for the sake of uniformity, and because in some cases a so-called local Cuban health bill was given, varying in print and text. In a few instances coastwise vessels failed to take supplementary bills of health when required to do so from infected ports, but no foreign vessels failed to do so. A trunk, while being disinfected upon the *Sanator* for Florida, was discovered by Dr. Frick to have a false bottom. It was thoroughly disinfected and the fraud placarded in large letters upon the trunk. In a few instances attempts were made to pass certificates of immunity to Florida ports by persons other than those to whom they were issued. The offenders were promptly detected and fined or imprisoned by the captain of the port.

MARITIME QUARANTINE AT HABANA.

The demands of quarantine in the harbor of Habana differ from those of any other port in the world. The supervision is manifold in its character. Every vessel, upon its arrival, particularly if from an infected or suspected port, receives a critical inspection of the condition of its passengers, cargo, and crew; and inquiry is made as to its sanitary history and that of its previous port of departure. If the conditions are found good, a free pratique is given. Here the parallel of procedure with noninfected ports of other countries ends. If the stay of the vessel in this harbor is of any length of time its crew is subject to medical inspection at different intervals, and any case of sickness occurring on board must be immediately reported to the quarantine officer. If the disease is of a quarantinable nature, the patient is immediately removed and the vessel disinfected. At other times a systematic inspection of all craft, large and small, lying in the harbor is made, a sort of round-up, as it were, and notes made of sickness of any kind on board, location of anchorage, or other pertinent facts.

In some special instances, where steamers make quick periodic trips to Gulf ports carrying United States mail and express matter, they are obliged to enter this port after sunrise, moor at certain buoys, and depart before sunset. Moreover, during the close quarantine season the crews are required to be immune to yellow fever. In addition, a quarantine guard is placed on board during the daylight stay of the vessel; and all these restrictions are imposed to facilitate communication and prevent the introduction of yellow fever into the neighboring ports of Florida. Passengers are also required to present evidence of immunity, which is necessarily rigid and official in character, for a permanent record in the Habana office. These certificates are often demanded upon evidence of the flimsiest character, and in some instances upon false written statements. They are issued as an accommodation to passengers furnishing well-established immunity, and not in any sense as a right. When the responsibility of the officer signing and guaranteeing these certificates is understood the justice of this position will be manifest.

On account of the prevalence of yellow fever in Habana during the past season and the expected arrival of a considerable number of nonimmune immigrants from Spain and the Canary Islands, the military governor, General Wood, very wisely decided to establish a detention camp for these people until they could be assured positions in the country districts. While objectionable alien immigrants are here detained until they can be deported, the detention of the majority of these people is really a police regulation of the city of Habana. A site was selected across the bay, above Triscornia, in a healthy, well-drained locality and exposed to the ocean breeze. Acting Asst. Surg. F. E. Menocal, Marine-Hospital Service, was detailed from this service as superintendent of the station, and has made a success of the project.

PREVALENCE OF DISEASE.

No case of smallpox has been reported upon the island during the year. There has been a minimum danger of its introduction from certain ports in the United States, on account of journey of a few days being so much shorter than the period of incubation of the disease. This has been guarded against to a great extent by requiring the crews of vessels and all other than first-class passengers to present evidence of vaccination.

Frequent special and weekly reports of the progress and prevalence of yellow fever have been made to you throughout the year, and may be found in the Public Health Reports.

Your attention is respectfully invited to the reports of the quarantine officers in charge of the various quarantine divisions of the island of Cuba. Directions were issued by this office to accompany the same with views of the station equipments.

Reports from the officers in charge of Habana Harbor and the disinfecting departments are also inclosed.

The work accomplished by the disinfecting steamer *Sanator* has been especially gratifying, and the number of vessels received alongside and disinfected during the year has been greater than at any other two ports of the world combined.

Respectfully,

A. H. Glennan,
Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Island of Cuba.

Surgeon-General Marine-Hospital Service.

QUARANTINE OFFICERS, HABANA CUBA, 1901.

HABANA.

[Inclosure No. 1.]

Marine-Hospital Service, Harbor Department,
Habana, Cuba, August 14, 1901.

Sir: I have the honor to submit the following report of the transactions of the harbor department from September 16, 1900, to June 30, 1901, both inclusive:

Incoming vessels inspected		1,197
Outgoing vessels inspected, bound for United States or Porto Rico		777
Outgoing vessels inspected, bound for Cuban ports not having railroad communication with Habana		159
Vessels lying in Habana Harbor, inspected		90
Total vessels inspected		2,223
Crew inspected:		
On incoming vessels	34,809	
On outgoing vessels	35,655	
On vessels lying in Habana Harbor	565	
Total crew inspected		71,029
Passengers inspected:		
On incoming vessels	34,276	
On outgoing vessels	19,497	
Total passengers inspected		53,773
Ill sailors examined and prescribed for	597	
Ill sailors examined and sent to the hospital	84	
Persons examined for pilot's license	60	
Sailors examined prior to shipping as to immunity from smallpox by previous attack or successful vaccination	281	
Persons examined and vaccinated	925	
Total of these cases		1,947
Grand total of persons inspected		126,749

Duplicate bills of health issued to vessels bound for United States or Porto Rico	1,554
Bills of health issued for vessels bound for foreign ports	330
Bills of health issued for vessels bound for Cuban ports having railroad communication with Habana (duplicate)	2,282
Bills of health issued for vessels bound for Cuban ports not having railroad communication with Habana (duplicate)	318
Bills of health issued to viveros	106
Total bills of health issued	4,590

Certificates issued for pilot's license	60
Vaccination certificates issued	1,206
Hospital permits issued (duplicate)	168
Certificates issued referring to mechanical cleanliness of cattle vessels	296
Permits issued for shipping of ballast	29
Total certificates and permits issued	1,759

During the above period six cases of yellow fever have been removed from vessels, as follows:

One from Ward Line S. S. *Orizaba*, for New York from Vera Cruz; source of infection, probably Vera Cruz.

One from Ward Line S. S. *Matanzas*, from Tampico for New York; source of infection, probably Tampico.

One from Ward Line S. S. *Mexico*, from New York for New York; source of infection, probably Habana city, as the man had been ashore.

One from U. S. transport *Sedgwick*, from New York and Cuban ports for New York via Key West; source of infection could not be traced.

One from U. S. transport *McPherson*, from New York, Habana, and other Cuban ports and return to Habana for New York; source of infection, probably Habana city. At first the transport officers and patient denied having been ashore in Habana prior to transport sailing for other Cuban ports. Afterwards patient admitted a surreptitious visit to the city of Habana.

The French S. S. *La Navarre*, from Santander and Corunna for Vera Cruz and Habana, arrived in this harbor October 4, 1900, with 64 cabin passengers and 621 steerage passengers. Two hundred and fifteen of these were bound for Vera Cruz. One of the Habana steerage passengers was in the 7th day of a well-marked attack of smallpox. The patient was wrapped in sheets previously saturated in a 1-800 solution bichloride of mercury and removed to the city lazaretto. The cabin passengers for Habana were vaccinated and released. The steerage passengers for Habana showing well-marked signs of a previous attack of this disease were sent to the U. S. S. *Sanator*, their wearing apparel and hand baggage disinfected, a bichloride bath given, and released. The remainder of the Habana steerage, 452 in number, were vaccinated and transferred to Mariel quarantine station, where their wearing apparel and hand baggage was disinfected and they detained fourteen days. No further cases having developed they were returned to Habana and released. Two medical officers from this department accompanied this expedition and conducted the detention. The steerage compartment where the case occurred and the hospital were disinfected, and the ship allowed to proceed to Vera Cruz.

This department also exercises a general supervision over the anchorage and wharfage of all vessels plying between United States or Porto Rico and Habana, as well as the shore communication of crews of said vessels.

In addition to the above quarantine duties, this department treats, where called upon, all cases of illness occurring on American or foreign merchant vessels, officers and sailors of the Cuban revenue-cutter service, of the custom-house launches, of the harbor patrol launches, the harbor police, and the employees and attendants of the captain of the port, as well as emergency cases of the post-office and engineers' departments.

Respectfully, ALEXANDER B. MCDOWELL,
Acting Asst. Surg. U. S. Marine Hospital Service, in Charge of Harbor Depart.

Surg. A. H. GLENNAN,
Chief Quarantine Officer, Habana, Cuba.

[Inclosure No. 2.]

U. S. S. SANATOR,
Habana, Cuba, July 1, 1901.

SIR: I have the honor to submit herewith a report of the work done by the *Sanator* during the fiscal year ended June 30, 1901. As the report will show, the amount of work has been tremendous, and in my opinion could not possibly have been performed by a shore plant. Floating plants are no longer experiments; they have come to stay, having proven themselves much more practical and economical for disinfecting work than the old way, besides having the additional advantage of being completely isolated.

Referring especially to the *Sanator*, I would say that the number of vessels that can be handled in one day is measured entirely by the burning capacity of our sulphur furnaces, which I would respectfully state is not commensurate with the other capacities. If there were two sets of two double furnaces each, on two systems, more work could be accomplished.

The largest number of vessels alongside in one day for treatment was 8. This does not mean that these were all completely treated in this one day, but all were alongside. Some were partially disinfected the day before, as well as the day after. Seven, however, cleared on the day to which I refer.

Before concluding, I would respectfully invite your attention to the fact that the transactions of the *Sanator* have been steadily increasing. The fiscal year just closed will show an increase of about 30 per cent (I believe) of cargo vessels and 100 per cent of fishing smacks disinfected. Special attention is invited to the last month and last week of the year, as shown in the report. These are record breakers. For June 40 cargo vessels, 39 fishing smacks, total 79; for the last week, 11 cargo vessels, 39 fishing smacks, total 50, or nearly 3 vessels daily

Further, I would state that such time as the services of the crew could be spared the men have worked on the *Susana;* and should emergency require it, this vessel, while not completely finished, could be made serviceable in a few hours.

Respectfully,

JOHN FRICK,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

Surg. A. H. GLENNAN,
Chief Quarantine Officer, Habana, Cuba.

[Inclosure No. 2 A.]

Transactions of the disinfecting steamer Sanator from September 16, 1900, to June 30, 1901.

Month	Cargo and passenger vessels disinfected.	Fishing smacks disinfected.	Passengers' baggage disinfected.	Fishing smacks inspected.	Passengers' baggage inspected.	Members of crews and passengers inspected.
1900.						
September	13	10	131		40	185
October	19	46	320		3	368
November	10	48	106			74
December	3	36				37
1901.						
January	5					67
February	2					29
March	2					22
April	17			43		214
May	31	44		1		343
June	40	39				611
Total	142	223	557	44	43	1,950

Total number of vessels disinfected	365
Total pieces of baggage disinfected	557
Total number of vessels inspected	44
Total pieces of baggage inspected	43
Total number of crews and passengers inspected	1,950

[Inclosure No. 3.]

Report of cases of yellow fever occurring in the city of Habana, from September 16, 1900, to and including June 30, 1901.

Month.	Cases.	Deaths.
1900.		
September	149	29
October	311	73
November	214	54
December	62	20
1901.		
January	24	7
February	9	5
March	5	1
April	2	
May	5	
June	1	

[Inclosure No. 4.]

Transactions of passenger department from September 16, 1900, to and including June 30, 1901.

Month.	Inspected.	Vaccinated.	Immunes accepted.	Immunes rejected.
1900.				
September	374	28	182	42
October	748	66	212	69
November	982	50	136	38
December	2,141	156	....	....
Total	4,245	300	530	149
1901.				
January	1,595	102	....	....
February	2,012	87	....	....
March	2,926	69	....	....
April	2,065	41	9	7
May	1,280	6	222	40
June	1,548	3	481	39
Total	11,426	308	715	86

[Inclosure No. 5.]

Mortuary statistics, September 16, 1900, to June 30, 1901.

	1900.				1901.					
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
Yellow fever	31	74	53	21	9	6	2	....	....	....
Typhoid	5	5	7	4	3	1	10	10	16	15
Diphtheria	....	2	2	2	....	1	4	3	1	....
Glanders	1	1	....	2	2	2	2	1	....	1
Scarlet fever	....	....	....	....	....	1	....	....	....	....
Malaria	11	25	8	18	12	15	10	....	17	....
Measles	....	....	....	1	1	....	....	....	....	1
Tuberculosis	35	73	56	68	96	62	78	87	69	55
Enteritis	15	38	28	40	56	52	122	143	137	154
Meningitis	....	24	....	28	30	18	49	38	....	5
Cancer	....	7	....	12	10	11	16	15	22	10
All causes	258	507	440	485	476	408	557	565	517	498

[Inclosure No. 6.]

Transactions of the shore disinfecting plant from September 16, 1900, to June 30, 1901.

	1900.				1901.					
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
Baggage inspected	920	405	1,060	1,277	2,380	4,186	6,222	5,132	3,724	3,846
Freight inspected	34	4,684	3,579	3,291	1,421	1,033	814	1,532	2,886	8,367
Express inspected	....	344	185	91	119	46	72	37	113	91
Total	954	5,433	4,824	4,659	3,920	5,265	7,108	6,701	6,723	12,304
Baggage disinfected	769	1,002	456	1,193	690	372	549	574	2,422	865
Freight disinfected	442	442	1,021	116	3	....	....	2	44	300
Express disinfected	70	123	26	59	37	12	13	4	17	7
Mail disinfected	41	59	42	7	....	....	....	....	....	....
Total	1,322	1,626	1,545	1,375	730	384	562	580	2,483	1,172
To be disinfected	....	9	51	148	79	9	7	46	76	122
Total handled	2,276	7,068	6,420	6,182	4,729	5,658	7,677	7,327	9,282	13,598

SUPPLEMENTAL REPORT FROM HABANA.

Marine-Hospital Service,
Office of Medical Officer in Command,
Habana, September 23, 1901.

Sir: I have the honor to submit the following supplemental report for the period from June 30 to September 15, inclusive:

Yellow fever report.

	Cases.	Deaths.
July:		
Habana	4	1
Santiago de las Vegas	6	....
Regla	1	1
August:		
Habana	7	2
Inoculation station	7	3
Santiago de las Vegas	2	....
Santiago de los Baños	1	....
Regla	1	....
Cabaña	1	....
Shipping	1	....
September:		
Habana	1	....
Santiago de las Vegas	1	....

Passenger department.

	July.	August.	September.
Passengers inspected	1,219	1,244	671
Persons vaccinated	5	1	2
Persons examined for immunity:			
Accepted	481	297	257
Rejected	52	17	4

Harbor department.

Incoming vessels inspected	293
Outgoing vessels inspected bound for United States or Porto Rico direct	122
Outgoing vessels inspected bound for Cuban ports not having railroad communication with Habana	28
Vessels inspected bound for United States or Porto Rico via Cuban or foreign ports	36
Total	479
Crews of vessels inspected:	
Incoming	7,736
Outgoing	7,984
Total	15,720
Passengers of vessels inspected:	
Incoming	5,846
Outgoing	3,597
Total	9,443
Sailors examined and prescribed for	130
Sailors examined and sent to hospital	25
Persons examined for pilot's license	15

Persons examined prior to shipping as to immunity from smallpox by previous attack or successful vaccination	118
Persons examined and vaccinated	10
Total	298
Grand total of persons inspected	25, 461

Triplicated bill of health issued for vessels bound for United States or Porto Rico	474
Bills of health issued for vessels bound for foreign ports	78
Duplicated bills of health issued for vessels bound for Cuban ports:	
Having railroad communication with Habana	312
Not having railroad communication with Habana	56
Total	920

Certificates issued for pilot's license	15
Vaccination certificates	128
Duplicated hospital permits issued	50
Permits issued for shipping ballast	10
Certificates issued referring to mechanical cleanliness of cattle vessels	94
Total	297

Immigrants inspected and passed	2, 453
Immigrants recommended to be detained for further physical investigation	130
Immigrants deported for physical cause	6
Total	2, 589

Shore disinfecting plant.

Baggage disinfected	5, 556
Express disinfected	53
Freight disinfected	290
Total	5, 899

Baggage inspected and passed	7, 132
Express inspected and passed	323
Freight inspected and passed	16, 286
To be disinfected	278
Total	24, 019
Total handled	29, 918

Disinfecting steamer Sanator.

	July.	August.	September.	Total.
Cargo vessels disinfected	30	26	9	65
Fishing smacks disinfected	48	16	5	69
Baggage disinfected	2, 459	1, 443	676	4, 578
Crews and passengers inspected	862	555	197	1, 614

Triscornia Detention Camp.

Nonimmune passengers detained at quarantine 315

No cases of sickness occurred during the stay of any of these passengers at the camp.

Mortuary report.

July:

Yellow fever	2
Typhoid	5
Diphtheria	1
Dysentery	3
Enteritis	146
Measles	0
Scarlatina	2
Tuberculosis	91
Meningitis, simple	19
Malaria	11
Cancer and other malignant humors	15
Total deaths from all causes	537

August:

Yellow fever	5
Typhoid	4
Diphtheria	5
Dysentery	1
Enteritis	57
Measles	1
Scarlatina	1
Tuberculosis	74
Meningitis	42
Malaria	16
Cancer and other malignant humors	13
Total deaths from all causes	480

September (1st to 15th):

Typhoid	4
Dysentery	2
Enteritis	10
Tuberculosis	31
Measles	1
Grippe	1
Pneumonia	5
Malaria	3
Total deaths from all causes	161

Respectfully,

A. H. Glennan,
Surgeon U. S. Marine Hospital Service,
Chief Quarantine Officer for the Island of Cuba.

Surgeon-General Marine Hospital Service.

BATABANÓ.

Report of transactions at Batabanó, September 16, 1900, to June 30, 1901.

Marine Hospital Service,
Batabanó, Cuba, September 24, 1901.

Sir: I have the honor to submit the following report of the transactions at this station for the period from September 16, 1900, to June 30, 1901:

One hundred and thirty-three vessels were inspected and granted free pratique on arrival. Of this number 128 were engaged in the coastwise trade and the remaining 5 were from foreign ports. Two thousand nine hundred and thirty-three members of crews and 2,765 passengers were inspected on arrival. One hundred and seventy-two vessels were given bills of health and 3,358 members of crews and 2,750 passengers were inspected before departure. One thousand six hundred and ninety-seven certificates were issued to outgoing passengers and 63 passengers were vaccinated.

One case of yellow fever occurred during the period covered by this report, and owing to the fact that the case was promptly isolated and the premises disinfected, no further cases developed.

Respectfully,

José M. Campos,
Acting Assistant Surgeon, U. S. Marine Hospital Service.

Surgeon-General Marine-Hospital Service.

Supplemental report to September 15, 1901.

Marine-Hospital Service,
Batabanó, Cuba, September 24, 1901.

Sir: I have the honor to submit the following supplemental report for the period from July 1 to September 15, 1901, both inclusive.

Fifty-eight vessels were inspected and granted free pratique on arrival and 1,252 members of crews and 1,154 passengers were inspected and permitted to land Of the vessels inspected on arrival, 2 were from foreign ports and the remainder from coastwise ports of Cuba. Fifty-nine bills of health were issued to outgoing vessels and 1,300 members of crews and 911 passengers were inspected before departure.

On August 30 the British sloop *Vaquero* arrived from Cortes, Cuba, with 1 death en route. The case was that of a boy 10 years of age, who died from dysentery and malaria. The cabin of the vessel was disinfected with sulphur and the vessel allowed to enter.

Respectfully,

José M. Campos,
Acting Assistant Surgeon, U. S. Marine Hospital Service.

Surgeon-General Marine-Hospital Service.

MATANZAS AND SUBPORTS.

REPORT OF TRANSACTIONS AT THE PORT OF MATANZAS AND THE SUBPORTS OF THE SECOND QUARANTINE DISTRICT OF CUBA DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT OF TRANSACTIONS FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By P. A. Surg. G. M. Guiteras.

Marine-Hospital Service,
Matanzas, July 24, 1901.

Sir: In accordance with instructions contained in letter from the chief quarantine officer under date of June 8, 1901, I have the honor to submit herewith a report of the transactions of the service in the second quarantine district of the island of Cuba during the fiscal year ended June 30, 1901.

The district referred to comprises that part of the northern coast of the island within the limits of the provinces of Matanzas and Santa Clara, and includes the four important ports of Matanzas, Cardenas, Isabela de Sagua, and Caibarien. The latter two are the ports of entry of the large towns of Sagua la Grande and Remedios, respectively, which are situated a short distance inland from the coast. Of the four ports above mentioned the latter three are to be considered, from a quarantine point of view, simply as inspecting stations, and, therefore, are not provided with disinfecting apparatus. Infected vessels arriving at such stations are remanded by the quarantine officer in charge to the fully equipped Matanzas station for disinfection and detention.

OFFICERS AND QUARANTINE FORCE (ALL CUBANS), MATANZAS, CUBA.

The equipment of the Matanzas quarantine station is adequate for the performance of the work expected of it, except in a few minor details.

The station and its equipment may be described as follows:

(*1*) *The office building.*—Under the old régime this building was occupied by the captain of the fort, but shortly after the American occupation it was transferred to the Marine-Hospital Service by the U. S. Military Government. Although in a sadly dilapidated condition, it is admirably situated for its present purposes, fronting, as it does, directly on the bay and commanding a splendid view of the same. As suggested in my report of the operations of the Service for the fiscal year ended June 30, 1899, a new building should be erected on this site so soon as it is practicable to do so.

(*2*) *The disinfecting house* is situated immediately back of and adjoining the office building. It is a rectangular frame structure, 36 feet 2 inches long by 16 feet 3 inches wide, covered with a tiled hip roof, and divided by a partition into two unequal parts, the larger part occupied by the disinfecting apparatus and the smaller for the storage of coal and disinfecting material. The disinfecting plant consists of (*a*) a steam boiler, (*b*) a cylindrical steam disinfecting chamber, 8 by 4 feet, with a formalin-ammonia generator attached, (*c*) three autoclaves, (*d*) thirty-three sulphur pots, and (*e*) a force pump with the necessary suction and discharge hose.

The above forms what is known as the "shore disinfecting plant," and at present is used only for the disinfection of baggage.

(*3*) *The floating disinfecting plant* consists of the barge *Guardian*, a vessel of about 300 tons, fully equipped for the disinfection of vessels, baggage, etc., according to the most modern and approved methods. Its equipment, in brief, is as follows: A sulphur furnace, Sturtevant fan and engine for same, a large steam boiler with feed pump and injector, a "bichloride pump," and two cylindrical steam disinfecting chambers with formalin-ammonia generators attached. The above machinery is situated on the main deck of the barge, which is roofed in so as to afford protection from the weather. This roof forms a sort of hurricane deck, along one side of which runs the galvanized-iron pipe from the sulphur furnace, with three openings for attaching the sulphur hose. In the hold of the vessel two large cypress tanks are placed, one for fresh water, the other for bichloride of mercury solution. The *Guardian* is anchored at a convenient point in the harbor so as to admit vessels of all sizes coming alongside without difficulty; but at the same time considerable trouble is experienced in rough weather in keeping the two vessels together during the process of disinfection, resulting on one occasion in damage to the *Guardian.* This would be avoided by having a mooring buoy with ground tackle sufficiently heavy to hold both the barge and the vessel to be disinfected. Through the courtesy of Capt. Lucien Young, U. S. Navy, captain of the port of Habana, I obtained a buoy for the purpose indicated, but have failed thus far in securing the requisite anchor and chain. I would recommend that they be supplied.

(*4*) *The steam launch McAdam*, an excellent little launch, is used for boarding purposes and as a means of communication between the shore station and the barge *Guardian.* Unfortunately it is somewhat too small for this harbor, which is an open one, and frequently stirred up by the northeast trade winds. The dimensions of the launch are as follows: length, 28 feet; beam, 6 feet 2 inches; draft, 3 feet; free board, 20 inches. This low free board is what makes the boat very wet, even in an ordinarily rough sea. The *McAdam* is supplied with a Seabury water-tube boiler and a triple-expansion engine.

Personnel of the second quarantine district of the island of Cuba.

Matanzas.—P. A. Surg. G. M. Guiteras, U. S. Marine-Hospital Service, quarantine officer in command of district; Acting Asst. Surg. Felix Garcia, U. S. Marine-Hospital Service, assistant; Richard F. Amieva, clerk; Pablo Jorge, engineer of launch *McAdam* and of shore disinfecting plant; Manuel Fernandez, fireman of launch *McAdam* and of shore disinfecting plant; Manuel Sosa, coxswain of launch *McAdam;* Lorenzo Sarmiento, boatman of launch *McAdam;* Eulogio Bello, engineer of barge *Guardian;* Florencio Gomez, watchman and quartermaster, *Guardian;* Julian Perez, assistant watchman and quartermaster, *Guardian;* Juan M. Miranda, fireman, *Guardian;* Francisco Bazo, seaman and cook, *Guardian;* Dionisio Montero, messenger.

Cardenas.—Acting Asst. Surg. Enrique Saez, U. S. Marine-Hospital Service, in charge.

Isabela de Sagua.—Acting Asst. Surg. Pedro Garcia Riera, U. S. Marine-Hospital Service, in charge.

Caibarien.—Acting Asst. Surg. Leoncio Junco, U. S. Marine-Hospital Service, in charge.

The crews of the disinfecting barge *Guardian* and the launch *McAdam*, besides the duties assigned to them in the above list, unite to form the disinfecting crew when a vessel is to be disinfected.

The methods of "in quarantine" at all the ports in the second quarantine division are the same as those employed at national quarantine stations in the United States. Practically all vessels are inspected on arrival, but those coming from foreign ports or from infected or suspected ports, whether foreign or domestic, are carefully inspected on arrival by the quarantine officer or his deputy, in accordance with the provisions of the quarantine regulations of the U. S. Marine-Hospital Service bearing upon the subject, and if everything connected with the vessel, its cargo, passengers, and crew is found correct, the vessel is given a certificate of free pratique and turned over to the custom-house authorities.

If there is any reason to suppose that the vessel may endanger the public health, it is disinfected and held in quarantine for the requisite period of time according to the disease under consideration. Should an infected or suspected vessel arrive at one of the subports, it would be remanded at once to the Matanzas quarantine station for treatment, as before stated.

The Matanzas quarantine station is incomplete, in so much as there are no facilities under the immediate control of the Service for the detention of persons under observation or for the treatment of the sick. In ordinary cases the city lazaretto is available for the care of the sick, and an abandoned fort on the south shore of the harbor, abreast of the anchorage of the barge *Guardian*, can be utilized for the detention of a limited number of persons. If the number of persons to be detained or sick to be treated be too great to be handled here, the vessel would be remanded to the Mariel quarantine station.

For "out quarantine" purposes the following measures are taken:

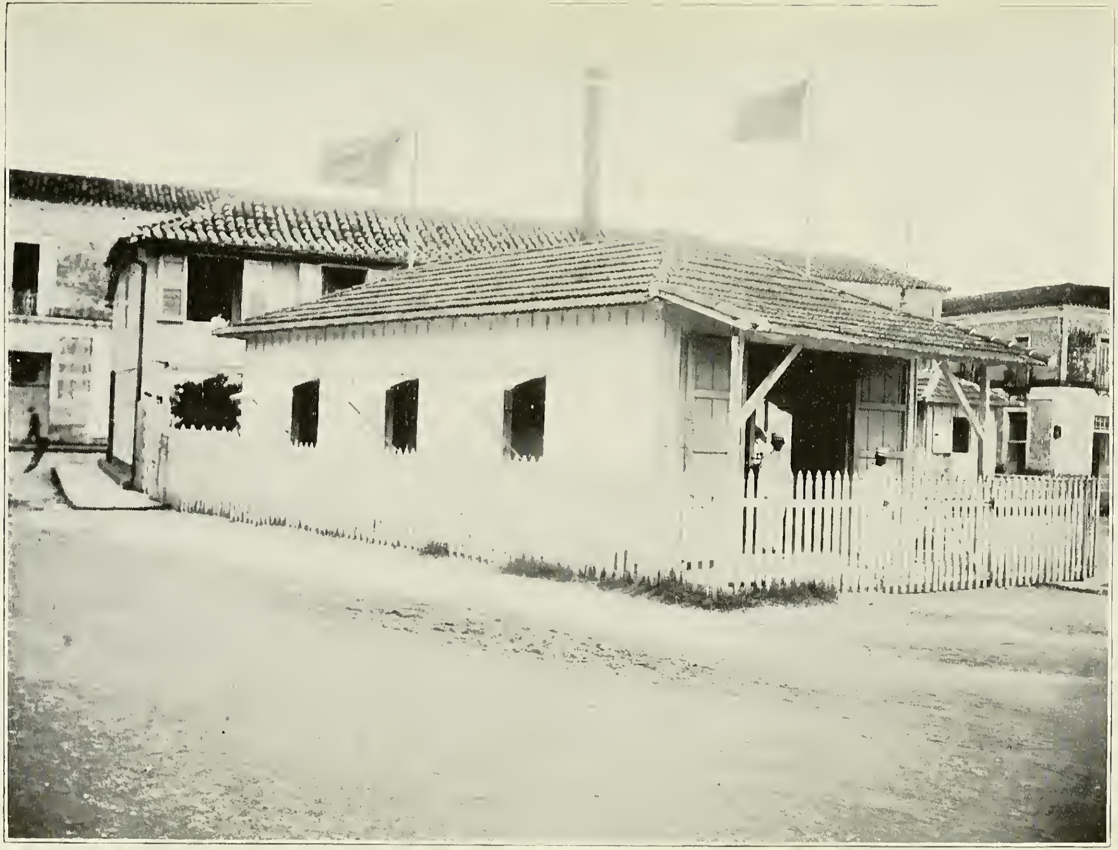
Bills of health are issued by the quarantine officer to all outgoing vessels.

Vessels bound for the United States or its outlying territories, or for noninfected Cuban ports not connected by rail with an infected focus, are inspected before departure to insure, as far as possible, that the vessel, cargo, passengers, and crew are free from infection. If the vessel is bound for a port south of the southern boundary of the State of Maryland, and the vessel expects to arrive at such port within ten days, the vessel may be disinfected at Matanzas before departure, thus utilizing the time in transit as quarantine detention time. The method of disinfecting vessels at this port is the same as that practiced at all national quarantine stations and according to the quarantine regulation issued for the purpose.

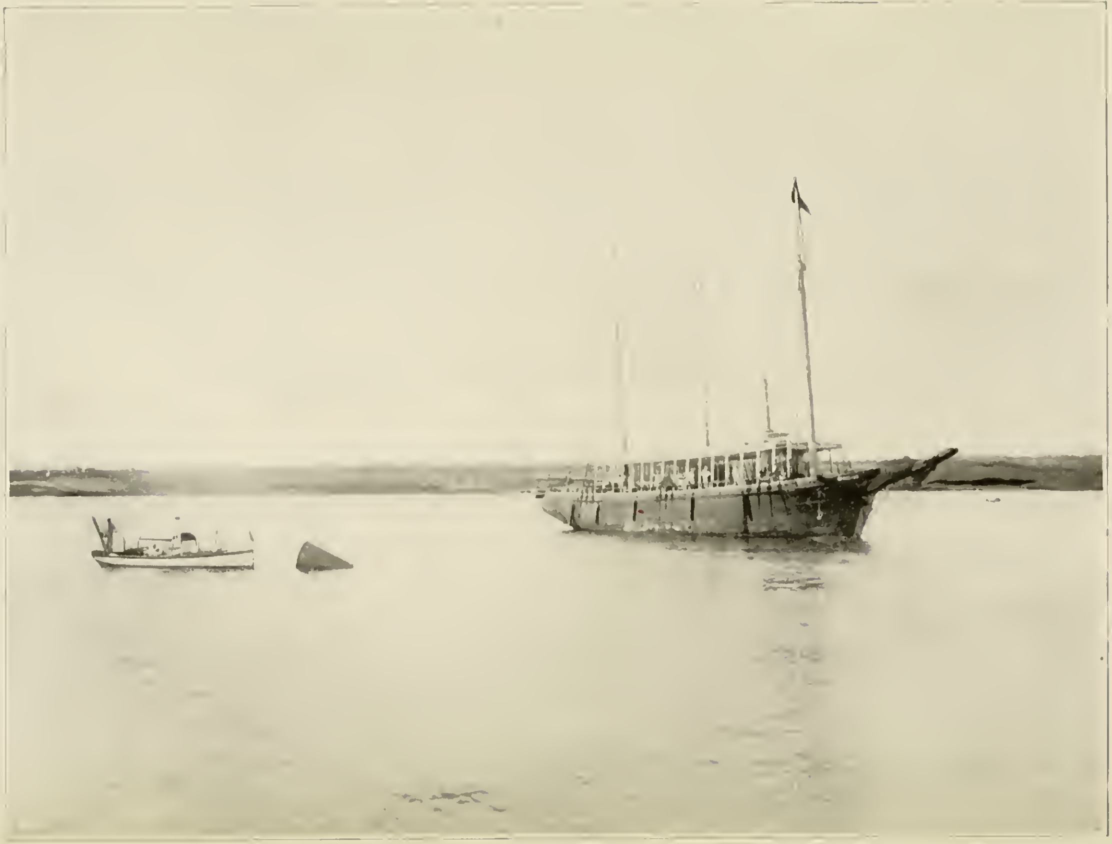
A passenger leaving for the United States or its outlying territories or for noninfected Cuban ports not connected by rail with an infected focus, must obtain a certificate of health from the quarantine officer, without which he can not board the vessel. This certificate must certify as to the health of the passenger at the time of sailing and to the fact that he is protected from smallpox by vaccination or a previous attack of the disease, and, if there is sufficient evidence to that effect, that he is immune to yellow fever. The baggage of passengers destined for the above-mentioned points is inspected and, if necessary, disinfected and labeled accordingly. The label, besides stating the action taken with the baggage, must show the name of the place where it was handled, the date, and the seal of the quarantine officer.

Baggage bound for points south of the southern boundary of the State of Maryland is invariably disinfected during the close quarantine season. North of that line it is usually simply inspected and passed unless there is reason to believe that it has been exposed to infection, in which case it is disinfected. When necessary, baggage is sealed, so as to prevent the danger of reinfection in transit. During the period covered by this report no complaint or claim has been received by this office for baggage damaged in the process of disinfection, and, as far as I am aware, none has been damaged. Judging from the mortality reports, the sanitary condition of the ports within the second quarantine division may be considered good. This is especially true as referring to Matanzas and Caibarien, both ports giving a low death rate, that of the former being 18.72 and the latter 15.26 per 1,000. This mortality compares favorably with that of most towns of corresponding size in other parts of the world. The death rate of Cardenas, while somewhat higher, 22.24 per 1,000, shows a marked improvement over the previous year, when it amounted to 27.91. Sagua makes quite a fair showing, with a mortality of 20.24 per 1,000.

Sixteen cases of yellow fever were reported during the fiscal year in the ports included within the second quarantine division. The following table shows the distribution of the cases as to date, place, and number:



OFFICE AND SHORE DISINFECTING PLANT, MATANZAS, CUBA.



STEAM LAUNCH McADAM AND DISINFECTING BARGE GUARDIAN, MATANZAS, CUBA.

Cases of yellow fever reported in the second quarantine district during the fiscal year 1900–1901.

Date.	Matauzas.	Cardenas.	Sagua.	Caibarien.
1900.				
July 7	....	....	2	....
July 25	1	....	....	....
August 2	....	1	....	....
August 26	1	....	....	....
September 16	....	....	2	....
October 23	1	....	....	....
November 1	....	....	1	....
November 7	1	....	....	....
November 10	1	....	....	....
November 14	1	....	....	....
November 15	1	....	....	....
November 23	1	....	....	....
December 16	1	....	....	....
1901.				
January 3	1	....	....	....
Total	10	1	5	....

From the above table it will be noted that the last case of yellow fever reported within the district occurred in Matanzas on January 3, 1901. The Cardenas and Sagua cases are directly traceable to the outbreak which prevailed among the troops stationed in Santa Clara. In the majority of the Matanzas cases the source of infection could be traced either to the same focus or to Habana. Two cases of typhus were reported. One was in Matanzas at the military hospital on August 24, 1900. The case was not reported to this office until the patient was convalescent, but his appearance at that time and the history of the case led me to believe that the diagnosis was erroneous. The second case was reported from Cardenas by two of the local physicians on June 8, 1901, after the death of the patient. A personal investigation of this case showed that it was not a case of true typhus fever.

No other cases of quarantinable disease were reported during the fiscal year.

Tables of mortality and of general statistics of the operations of the Service during the fiscal year are herewith appended.

It should be understood that this office is not responsible for the peculiar diagnoses that appear now and then in the mortality tables. They are given as reported by the municipal authorities.

In Tables I and II it will be noted that Cardenas and Sagua show a larger number of vessels handled than the more important port of Matanzas This is due to the fact that both at Cardenas and Sagua there is a large coasting trade, carried on by a fleet of small sloops and schooners. Matanzas has but little coasting trade, and that is carried on almost entirely by steamers. The amount of tonnage would make clear the relative importance of the different ports, but unfortunately at present I have not the necessary figures from the subports.

Table XI shows the relative mortality from yellow fever in Matanzas for the years 1890–1900. And, curiously enough, it will be seen that, contrary to the general impression, there is nothing extraordinary in the present freedom from yellow fever, inasmuch as the years 1890, 1891, and 1892 have a better record in this respect than 1900.

Respectfully,

G. M. Guiteras,
Passed Assistant Surgeon, U. S. Marine-Hospital Service, in Command.

The Surgeon-General Marine-Hospital Service.

[Inclosure No. 1.]

TABLE I.—*General statistics of the operations of the Service from September 16, 1900, to June 30, 1901.*

INWARD.

	Matanzas.	Cardenas.	Sagua.	Caibarien.
Passengers inspected	3,248	380	2,031	381
Vessels inspected and passed	246	256	452	81
Vessels passed without inspection	34	261	90	200
Pieces of baggage inspected and passed	....	153	....	....
Pieces of baggage passed without inspection	....	227	....	....
Gross tonnage of vessels	552,932	304,165	355,842	299,617
Number of crew inspected and passed	7,501	5,959	9,833	1,282

[Inclosure No. 2.]

TABLE II.—*General statistics of the operations of the Service from September 16, 1900, to June 30, 1901.*

OUTGOING.

	Matanzas.	Cardenas.	Sagua.	Caibarien.
Passengers inspected	1,885	160	1	381
Passengers vaccinated	14	7	....	....
Vessels inspected and passed	156	....	35	17
Vessels passed without inspection	115	528	480	264
Vessels disinfected	21	....	....	....
Vessels cleared	301	528	515	281
Pieces of baggage inspected and passed	897	....	1	....
Pieces of baggage passed without inspection	225	168	....	....
Pieces of baggage disinfected	194	....	....	....
Bundles of clothes and bedding disinfected	364	....	....	....
Gross tonnage of vessels	547,037	305,369	355,442	293,091
Number of crew inspected and passed	7,484	6,023	469	234

[Inclosure No. 3.]

TABLE III.—*General mortality, municipal district of Matanzas, for the fiscal year 1900–1901.*

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Typhoid fever	2	....	2	1	1	....	....	....	1	1	....	1	9
Typho-malarial fever	....	....	1	....	1	1	....	1	....	....	....	1	5
Malarial fever	6	13	6	6	2	2	2	3	2	1	6	3	52
"Fiebre de borras"	....	1	....	....	....	....	....	....	....	....	....	....	1
Yellow fever	1	1	....	1	5	1	1	....	....	....	....	....	10
"Infectious fever"	2	....	....	1	....	....	....	....	....	....	....	....	3
Grippe	1	....	....	....	2	....	....	1	1	....	....	....	5
Diphtheria	2	....	....	....	....	....	1	....	....	....	....	....	3
Septicemia	....	....	1	....	....	....	....	....	1	1	2	....	5
Pneumonia	....	....	....	....	....	1	....	1	....	....	....	....	2
Colo-enteritis	1	2	....	2	1	1	2	2	2	....	1	1	15
Dysentery	3	1	1	....	....	1	....	....	....	....	....	....	6
Tuberculosis	19	11	17	15	14	13	17	8	16	13	17	13	173
Tetanus, traumatic	1	2	....	1	....	....	....	2	....	....	1	....	7
Tetanus, infantile	5	6	5	3	4	4	6	1	4	3	3	2	46
Syphilis	....	....	....	....	....	....	....	....	....	2	....	....	2
Scrofula	....	....	....	....	1	....	....	....	....	....	....	....	1
Diabetes	....	....	....	....	....	....	....	....	....	....	1	....	1
Carcinoma	1	....	2	3	1	....	1	3	3	1	2	2	19
Chlorosis	....	....	....	1	....	....	1	1	....	....	....	....	3

TABLE III.—*General mortality, municipal district of Matanzas, for the fiscal year 1900–1901*—Continued.

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Rickets									1		1		2
Premature birth	1	1	2		2			1				1	8
Congenital debility	2	1	1	1	1	5	8	1	5	1	3	1	30
General debility in children	1	8	1		1	4		2	1	1	5	3	27
Senility	2		1	3	2	3	3	2	2	2	2	1	23
Alcoholism							1						1
Mercury								1					1
Contusion			1										1
Incised wound			1			1							2
Gunshot wound	2		2	1			1					1	7
Asphyxia by drowning		1		1	1		2	1					6
Asphyxia by hanging		2											2
Shock, traumatic	1	1											2
Endocarditis				1		1							2
Valvular heart disease	7	5	2	6	3	5	4	6	3	5	8	9	63
Angina pectoris		1				1		1					3
Atheroma											1		1
Arterio-sclerosis		2		1	3	3	4	2		1	2	2	20
Gangrene, senile	1		1		1							1	4
Hemorrhage from umbilical cord				2							1		3
Cyanosis		1		1									2
Nævus											1		1
Bronchitis	1	2					1	1	1	1	1		8
Broncho-pneumonia	2	3	3	2			1	2	4	3	3	2	25
Pulmonary congestion			2	1	2			1				2	8
Pleurisy										1		1	2
Pharingitis		1											1
Gastric embolism									1				1
Gastritis		1							1				2
Dyspepsia								1					1
Enteritis	16	3	5	5	6	6	6	5	5	9	10	13	89
Hepatitis										1			1
Invagination	1		1									1	3
Lithiasis	1											1	2
Hernia											1		1
Cirrosis of the liver	1		1		1		1				1	1	6
Undeterminated lesion		1	1	1							2		5
Lesion of the spinal cord			1						2			1	4
Lesion of the medula												1	1
Congestion (cerebral)	1		2	1	1		1			1	1		8
Hemorrhage (cerebral)	3	1	2	1		1	1		3		1	1	14
Softening of the brain		1				1	1				1	1	5
Meningitis	3	3	1		4		3		2	3	3	2	24
Epilepsy			1		1						1		3
Eclampsia				2		1	1	1	2	1	1		9
Menstrual disorders	1							1					2
Ovaritis											1		1
Dystoshis		2			1								3
Nephritis	5	2	2	3	5		4	1	1	2	4	4	33
Fractures		1			1	1							3
Burns			1							1			2
Total	96	81	70	67	70	57	74	53	64	55	88	73	848

Population	45,282
Annual death rate (per 1,000)	18.72

[Inclosure No. 4.]

TABLE IV.—*Mortality statistics for the fiscal year 1900–1901, municipal district of Matanzas.*

Race:	
White	531
Black	151
Mixed	113
Asiatic	21
Not specified	32
Total	848

Nativity:	
Cuba	664
Spain	83
Africa	23
Asia	21
Other country	16
Not specified	41
Total	848
State:	
Single	312
Married	125
Widowed	71
Not specified	340
Total	848
Sex:	
Male	454
Female	394
Total	848
Age:	
From 0 to 1 year	209
From 1 to 10 years	59
From 10 to 20 years	65
From 20 to 30 years	1[illegible]1
From 30 to 40 years	93
From 40 to 50 years	92
From 50 to 60 years	78
From 60 to 70 years	57
Over 70 years	55
Not specified	39
Total	848

[Inclosure No. 5.]

TABLE V.—*Comparative statement of mortality for the city of Matanzas for the years 1898 to 1901.*

Month.	1898.	1899.	1900.	1901.
January	772	323	93	69
February	564	256	87	52
March	385	205	107	63
April	302	138	68	51
May	317	127	79	76
June	316	118	63	66
July	378	118	93	....
August	508	113	72	....
September	712	100	69	....
October	688	72	66	....
November	591	88	61	....
December	449	95	53	....
Total	5,982	1,753	911	377
Rate per 1,000	121.80	44.52	20.11	16.65

[Inclosure No. 6.]

TABLE VI.—*General mortality municipal district of Cardenas for the fiscal year of 1900–1901.*

Diseases.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Typhoid fever	1	2	1	....	....	....	1	....	....	....	1	2	8
Intermittent fever	1	1	1	....	1	1	....	1	....	....	....	2	8
Malarial cachexia	5	5	1	1	....	3	2	....	1	....	....	1	19
Variola	....	....	1	....	....	....	....	....	....	....	....	....	1
Whooping cough	1	....	....	....	....	....	....	....	....	....	....	....	1
Diphtheria and croup	....	....	....	1	1	....	....	....	....	....	....	....	2
Influenza	....	....	....	....	....	....	....	1	....	....	....	....	1
Dysentery	....	1	....	....	....	....	....	....	....	....	2	1	4
Borras fever (yellow)	1	....	....	....	....	....	....	....	....	....	....	....	1
Septicæmia	....	2	1	....	1	....	....	....	....	....	....	1	5
Hydrophobia	....	....	1	1	....	....	....	....	....	....	....	....	2
Tuberculosis of larynx	....	1	....	1	....	....	....	....	....	....	....	....	2
Tuberculosis, pulmonary	11	12	2	10	11	9	9	12	8	3	4	3	94
Tubercular meningitis	....	1	....	....	....	....	1	....	....	1	1	....	4
Abdominal tuberculosis	....	2	....	1	....	....	....	1	....	1	....	2	7
Congenital syphilis	....	....	....	....	....	....	1	....	....	....	....	....	1
Tumor of the mouth (cancer)	1	....	1	....	....	1	1	2	....	....	....	....	6
Cancer and other tumors of stomach and liver	....	....	....	....	....	1	....	....	....	....	....	....	1
Cancer and other tumors of female genitals	1	1	....	....	1	....	....	....	....	....	2	....	5
Tumors not specified	2	1	1	1	1	....	....	....	2	1	1	1	11
Alcholism	1	1	....	....	....	....	2	....	....	....	....	1	5
Chronic poisoning	....	1	1	....	....	....	....	....	1	....	....	....	3
Encephalitis	1	....	....	1	....	....	....	1	....	....	....	....	3
Simple meningitis	3	3	2	2	....	1	1	1	3	1	1	1	19
Cerebral hemorrhage	6	2	1	1	2.	....	5	7	1	2	2	1	30
Softening of the brain	....	....	....	....	....	....	....	....	....	1	....	....	1
Eclampsia (not puerperal)	....	1	2	....	1	1	....	....	....	....	....	....	5
Tetanus	....	1	....	1	1	....	....	....	1	....	....	2	6
Other diseases of nervous system	1	....	....	1	....	....	....	....	1	1	1	1	6
Pericarditis	1	....	....	....	....	....	....	....	....	....	....	....	1
Endocarditis	....	....	1	....	....	....	....	1	....	....	....	....	2
Organic heart disease	4	2	3	8	4	1	....	3	1	5	3	5	39
Angina pectoris	....	....	....	....	....	1	....	....	....	....	....	....	1
Diseases of the arteries	1	2	1	3	2	....	3	3	2	1	3	1	22
Hemorrhage	....	....	....	2	1	1	....	....	....	....	....	....	4
Other diseases of the circulatory system	2	....	....	....	1	2	....	2	3	1	2	5	18
Disease of the larynx	....	....	....	....	1	....	....	....	....	....	....	....	1
Bronchitis:													
Acute	2	1	2	1	....	1	....	2	2	....	....	1	12
Chronic	1	....	....	....	....	....	....	....	....	....	....	....	1
Broncho-pneumonia	....	1	....	....	....	....	1	....	....	1	....	....	3
Pneumonia	2	1	....	1	....	1	3	2	1	....	1	1	13
Pleurisy	....	....	....	....	....	....	....	....	1	1	1	....	3
Congestion and apoplexy of lung	....	....	....	....	2	....	1	1	....	....	....	1	5
Gangrene of lung	....	....	....	....	1	....	....	....	....	....	....	....	1
Diarrhea and enteritis:													
Under 2 years	6	3	4	....	1	2	4	4	3	5	3	10	45
Over 2 years	1	....	1	2	....	....	1	....	....	....	....	1	6
Hernia	....	....	....	....	....	1	....	....	....	1	....	1	3
Other diseases of the intestines	....	....	....	....	....	....	....	....	....	2	1	2	5
Jaundice	....	....	....	....	1	....	....	....	....	....	....	....	1
Cirrhosis of the liver	....	....	....	2	1	1	1	1	1	....	....	1	8
Other diseases of the liver	....	....	....	....	....	....	....	1	3	....	....	1	5
Acute peritonitis, nonpuerperal	....	1	....	....	....	....	....	....	....	....	....	1	2
Acute nephritis	....	....	....	....	3	....	....	....	....	....	....	....	3
Bright's disease	2	....	1	1	2	1	1	....	....	....	1	1	10
Puerperal hemorrhage	....	....	....	....	....	....	....	....	....	1	....	....	1
Puerperal septicæmia	1	....	....	....	....	....	1	....	....	....	....	2	4
Gangrene	1	....	....	....	....	1	1	....	....	....	....	....	3
Bone disease (nontuberculosis)	....	2	....	1	....	2	....	....	....	....	....	....	5
Congenital debility	....	1	....	....	....	....	....	2	1	....	2	....	6
Other diseases of infancy	6	3	4	3	1	3	4	1	1	5	2	5	38
Senile debility	....	1	2	1	....	....	....	1	1	....	....	....	6
Suicide:													
By poison	....	2	....	....	....	....	....	....	....	....	....	....	2
By strangulation	....	....	....	....	....	1	....	....	....	....	....	....	1
By firearms	1	....	....	....	....	....	....	....	....	....	....	....	1
Accidental injuries	3	....	....	....	1	....	....	1	....	....	....	....	5
Drowning	2	....	....	....	....	....	1	....	....	....	1	....	4
Inhalation of noxious gases	....	....	....	....	....	....	....	....	....	1	....	....	1
Sudden death	....	....	1	....	....	....	....	....	....	....	....	....	1
Total	72	58	36	47	42	36	45	51	38	35	35	58	553

Population 24,861
Annual death rate (per 1,000) 22.24

[Inclosure No. 7.]

TABLE VII.—*Mortality of the municipality of Cardenas for the fiscal years 1895–96 to 1900–1901.*

Fiscal years.	Deaths.	Death rate.
1895–96	837	33.67
1896–97	2,450	98.55
1897–98	2,455	98.75
1898–99	1,609	64.72
1899–1900	694	27.91
1900–1901	553	22.20

[Inclosure No. 8.]

TABLE VIII.—*General mortality of the municipal district of Sagua for the fiscal year 1900–1901.*

Alcoholism	5
General debility in children, and rickets	13
Heart diseases	30
Diseases of the liver	1
Diseases of the respiratory system	28
Cancer	8
Cerebral congestion and hemorrhage	11
Dysentery	6
Enteritis	53
Infectious enteritis	4
Yellow fever	1
Bilious fever	2
Infectious fever	6
Malarial fever	20
Pernicious fever	8
Typhoid fever	4
Inanition	1
Old age	7
Meningitis	5
Nervous disease	1
Violent death	2
Nephritis	7
Septicæmia	5
Tetanus, infantile	10
Uræmia	9
Cyanosis	2
Atrophy	2
Shock after operation	3
Bright's disease	2
Poisoning	2
Wound	2
Cerebral disease	11
Heart failure	4
Hernia	2
Paralysis	1
Asphyxia	3
Grippe	1
Myelitis	3
Tetanus, traumatic	2
Tuberculosis	91
Other causes	54
Total	432
Population	21,342
Annual death rate (per 1,000)	20.24

[Inclosure No. 9.]

TABLE IX.—*General mortality of the municipal district of Caibarien for the fiscal year 1900–1901.*

Diseases.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Pernicious fever	1	2	1					1	1				6
Typho-malarial	3				1	1							5
Typhoid fever			1		1								2
Infectious fever				1									1
Malarial fever						2	1						3
Dysentery		2									1	1	4
Croup										1			1
Tuberculosis	2	2			1		1	1	1			2	10
"Atresia"	1	1		1				1		1			5
Pernicious anæmia										1			1
Senility		1			1			1		1			4
Tetanus neomatorum		1	2	1	1	1			1				7
Uræmia			1						1				2
Icterus				1									1
Asthænia								1					1
Malignus pustule									1				1
Cerebral anæmia		1											1
Apoplexy of the brain			2										2
Infantile convulsion			1										1
Hemorrhage of the brain				1		1			2	1			5
Myelitis				1									1
Meningitis				1					1			2	4
Serous apoplexy					2				1				3
Congestion of the brain					1							1	2
Hydrocephalus						1							1
Cerebral apoplexy							1						1
Delirium tremens	1												1
Heart disease			1	1		1		1	2	1		1	8
Angina pectoris											1		1
Arterio-sclerosis			1					3					4
Aortic aneurism						1							1
Pneumonia						1							1
Pulmonary congestion								1					1
Pulmonary embolus								2					2
Hemoptysis											1		1
Ulcer of the stomach	1												1
Gastric fever				1									1
Gastro-enteritis										4			4
Enteritis											1	4	5
Entero-colitis	1	1										1	3
Intestinal obstruction							1						1
Hepatic abscess	1												1
Cirrhosis of the liver		1											1
Acute hepatitis						1							1
Bilious hemorrhage						1							1
Peritonitis		1					1				1		3
Linphadenitis							1						1
Bright's disease					1								1
Urinary infiltration								1					1
Subphronic abscess			1										1
Epithelioma			1			1		1			1		4
Carcinoma				1			1						2
Cancer of the stomach										1			1
Burns			1										1
Traumatism	1												1
Asphixia by submersion					1								1
Undiagnosed	1												1
Total	13	13	13	10	10	12	7	14	11	11	6	12	132

Population	8,650
Annual death rate (per 1,000)	22.63

[Inclosure No. 10.]

TABLE X.—*Mortality statistics of yellow fever for the five years 1896–1900.*

Years.	Matanzas.	Cardenas.	Sagua.	Caibarien.
1896	301	80	230	36
1897	101	40	139	
1898	12	1	8	
1899	5		1	
1900	10	1	1	

SUPPLEMENTAL REPORT FROM MATANZAS.

MARINE-HOSPITAL SERVICE,
Matanzas, Cuba, September 23, 1901.

SIR: Through the chief quarantine officer for the island of Cuba, and in accordance with instructions contained in Bureau letter of July 18, 1901, I have the honor to submit herewith a supplementary report of the transactions of the Service in the second quarantine division of the island of Cuba for the period from July 1 to September 15, 1901, both dates inclusive.

Tables I and II give a general summary of the work of the division. Nothing of special note has occurred during the period covered by this report. The health of the ports comprised within the division has been good, although not so much so as during the same period of the preceding year, 1900. From Table VII it will be seen that the death rate of Matanzas, Sagua, and Caibarien has increased when compared with that for the same period of last year, Cardenas alone showing improvement. Caibarien shows an enormous increase, but it is evident that last year's figures were incorrect and based on faulty information. No quarantinable diseases have been reported except in Matanzas, where 3 cases of yellow fever have been treated, 1 terminating fatally. Two of these cases were brought from a plantation at some distance from the city, the origin of the infection being undoubtedly Habana. In the third and fatal case the source of the infection could not be traced. All these cases were treated at the civil hospital, which institution is now provided with a mosquito-proof ward for the treatment and isolation of cases of yellow fever or those suspected of being such.

In accordance with orders from the chief quarantine officer the medical officers in charge of the subports of Cardenas and Caibarien have been detailed to Habana at different times for a period of three or four weeks to receive practical instruction in the technique of disinfection and quarantine measures in general. These officers were relieved during their stay in Habana by one of the staff of the chief quarantine officer. It is proposed to order the officer in charge of the station at Isabela de Sagua to Habana for the same purpose as soon as practicable. These details have been of great value in giving these officers a practical knowledge of quarantine matters at the best school in existence for the purpose, and will no doubt yield gratifying results.

Tables III to VI give the mortality statistics for the period covered by this report for the municipal district of the port of Matanzas and the subports within the second quarantine division of Cuba.

Attention is invited to the fact that the data for making up the mortality tables have been obtained from the records of the civil authorities and that this office is not responsible for the nomenclature of diseases used in said tables.

Respectfully,

G. M. GUITERAS,
Passed Assistant Surgeon, U. S. Marine-Hospital Service, in Command.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

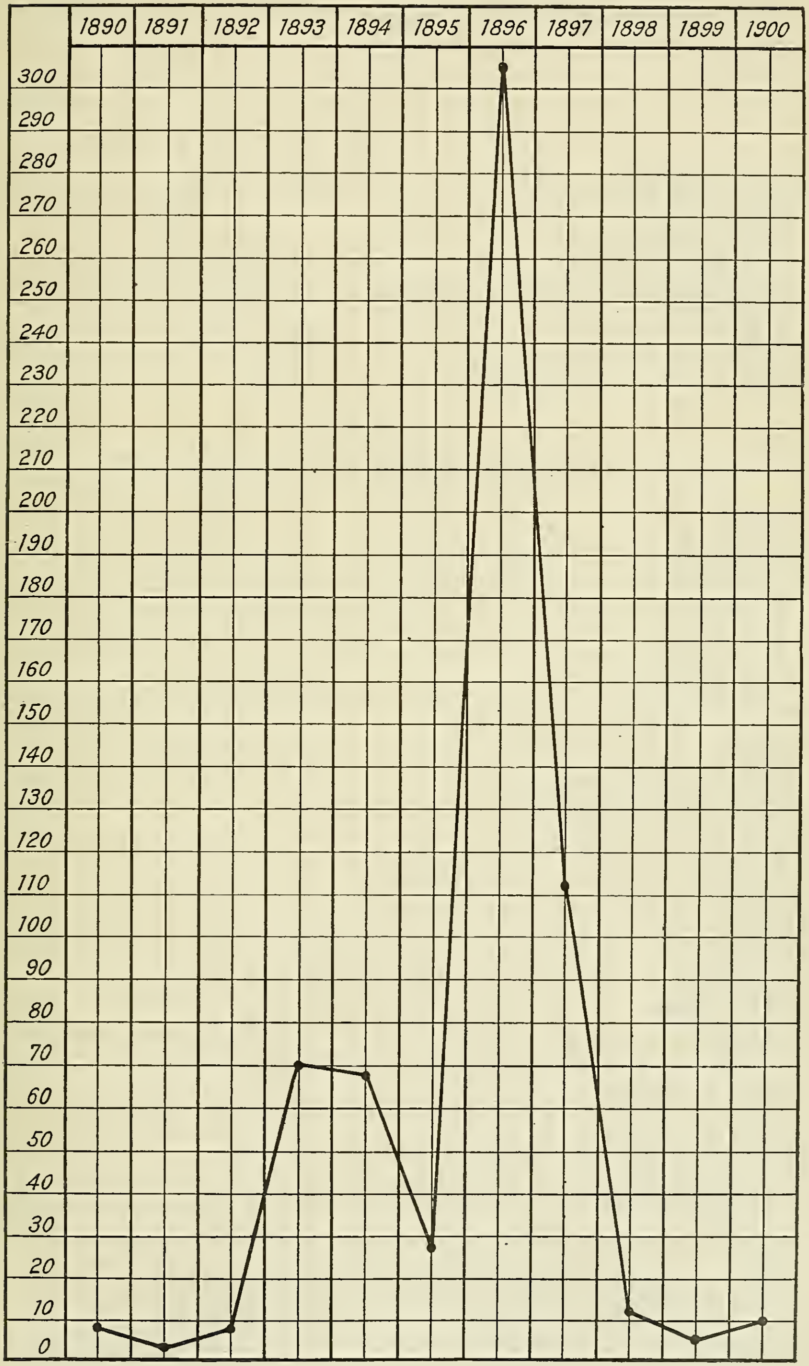
[Inclosure No. 1.]

TABLE I.—*General statistics of the operations of the Service from July 1 to September 15, 1901.*

INWARD.

	Matanzas.	Cardenas.	Sagua.	Caibarien.
Passengers inspected	432	177	107	29
Passengers passed without inspection	7	....	....	....
Vessels inspected	48	62	20	4
Vessels passed without inspection	23	97	101	92
Pieces of baggage disinfected	....	....	3	....
Crew inspected	1,458	1,220	559	30
Crew passed without inspection	152	....	....	....
Gross tonnage of vessels	85,673	90,915	96,147	59,491

Comparative diagram of mortality of yellow fever at Matanzas, fiscal years 1890–1900.



[Inclosure No. 2.]

TABLE II.—*General statistics of the operations of the Service from July 1 to September 15, 1901.*

OUTGOING.

	Matanzas.	Cardenas.	Sagua.	Caibarien.
Passengers inspected	351	132	6	5
Passengers passed without inspection	185	25		206
Passengers vaccinated	6			
Vessels inspected and passed	28	49	9	3
Vessels passed without inspection	47	112	110	85
Vessels disinfected	13			
Pieces of baggage inspected and passed	400			
Pieces of baggage disinfected	18			
Crew inspected	597	1,121	106	29
Crew passed without inspection	1,044	6,909		
Gross tonnage of vessels	88,649	91,015	106,679	59,781
Certificates of protection from smallpox issued	326			
Health and acclimation certificates issued	22	64		

[Inclosure No. 3.]

TABLE III.—*General mortality, municipal district of Matanzas, from July 1 to September 15, 1901.*

Scarlet fever	1
Typhoid fever	5
Typho-malarial	2
Malarial fever	10
"Fiebre de borras"	2
Yellow fever	1
Puerperal fever	1
Intestinal tuberculosis	3
Cholera infantile	3
Tuberculosis	35
Tetanus infantile	13
Carcinoma	2
Rickets	1
Congenital debility	5
General debility in children	6
Marasmus	1
Senility	6
Alcoholism	2
Intoxication	1
Incised wound	2
Shotgun wound	2
Carcinoma	2
Valvular lesion	5
Arterio-sclerosis	8
Gangrene senile	1
Bronchitis	2
Pneumonia	3
Pulmonary congestion	2
Enteritis	41
Hepatitis of the liver	1
Cyanosis	3
Cerebral congestion	1
Cerebral hemorrhage	4
Meningitis	3
Eclampsia	2
Nephritis	12
Uræmia	2
Fracture of the skull	1
Fracture of bone	1
Epithelioma	2
Complicated labor	1
Disease of the aorta	1

Streptococcia	1
Pneumococcia	1
Heart disease	3
Pulmonary embolus	1
Catarrhal jaundice	1
Multiple neuritis	1
Atheroma	1
Total	211
Population	45, 282
Death rate (per 1,000)	22. 37

[Inclosure No. 4.]

TABLE IV.—*General mortality, municipal district of Cardenas, from July 1 to September 15, 1901.*

Typhoid fever	3
Intermittent fever	1
Malarial fever	2
Diphtheria	1
Dysentery	1
Leprosy	1
Pulmonary tuberculosis	20
Tuberculosis of other organs	1
Cancer:	
Of uterus	2
Of other organs	1
Alcoholism	1
Meningitis	4
Congestion and hemorrhage of brain	5
Paralysis, general	1
Endocarditis	1
Heart, organic and valvular	13
Arteries, diseases of (circulatory system)	2
Hemorrhages (circulatory system)	3
Other diseases (circulatory system)	1
Bronchitis	1
Broncho-pneumonia	2
Gastric ulcer	1
Enteritis:	
Less than 2 years	16
Chronic	3
Over 2 years	4
Acute jaundice	1
Cirrhosis of liver	3
Peritonitis	2
Other diseases (of digestive system)	1
Appendicitis	1
Nephritis	2
Other diseases (of urinary system)	3
Diseases of the new born	5
Senility	2
Tetanus	1
Total	112
Population	24, 861
Death rate (per 1, 000)	21. 51

[Inclosure No. 5.]

TABLE V.—*General mortality, municipal district of Sagua, from July 1 to September 15, 1901.*

Meningitis	5
Cerebral hemorrhage	1
Tetanus, infantile	5

Myelitis, chronic	1
Paralysis, infantile	1
Pulmonary tuberculosis	25
Bronchitis, acute	1
Heart disease	12
Cyanosis	2
Intestinal diseases	25
General debility in children	5
Dysentery	2
Cholera, infantile	1
Infectious diarrhea	1
Intestinal occlusion	1
Peritonitis	1
Congenital debility	1
Hematophilia	1
Senility	1
Malarial cachexy	1
Cancer of the stomach	1
Typhoid fever	1
Infectious fever	4
Puerperal fever	1
Pernicious fever	2
Pneumonia	2
Tabes mesenterica	1
"Fiebre comatosa"	1
Total	106
Population	21,342
Death rate (per 1,000)	23.84

[Inclosure No. 6.]

TABLE VI.—*General mortality, municipal district of Caibarien, from July 1 to September 15, 1901.*

General debility in children	5
Arterio-sclerosis	1
Cancer of the stomach	1
Cirrhosis of the liver	1
Congenital debility	1
Cerebral anæmia	1
Eclampsia	3
Gastro-enteritis	2
Cerebral hemorrhage	1
Heart disease	1
Hydrohæmia	1
Peritonitis, acute	1
Typho-malarial	1
Tuberculosis of the lungs	1
Typhoid fever	1
Intestinal infections	5
Pernicious fever	2
Malarial fever	1
Uræmia	1
Unknown	1
Total	32
Population	8,650
Death rate (per 1,000)	17.75

[Inclosure No. 7.]

TABLE VII.—*Comparative death rate from July 1 to September 15, 1901.*

	Population.	Deaths.	Death rate.	Death rate for same period, 1900.
Matanzas	45,282	211	22.37	20.40
Cardenas	24,861	112	21.53	27.12
Sagua	21,342	106	23.84	22.50
Caibarien	8,650	32	17.75	2.90(?)

[Inclosure No. 8.]

TABLE VIII—*Mortality statistics of yellow fever from July 1 to September 15, 1901.*

	Matanzas.
Cases reported:	
August 30	2
September 5	1
Death reported, September 10[a]	1

[a] Case reported September 5.

NUEVITAS AND SUBPORTS.

REPORT OF TRANSACTIONS AT THE PORT OF NUEVITAS AND THE SUBPORTS OF THE THIRD QUARANTINE DISTRICT OF CUBA DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT OF TRANSACTIONS FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. OWEN W. STONE.

NUEVITAS, CUBA, *August 1, 1901.*

SIR: I have the honor to transmit, through the chief quarantine officer, the following report for the period from September 16, 1900, to June 30, 1901, inclusive:

There have been no changes in the equipment of this station, which has been kept in good repair. It consists of the shore plant, a frame building 20 feet wide by 60 feet long, containing a steam chamber and boiler complete, of the Kensington make. In addition there are an autoclave and force pump with the necessary hose for disinfecting vessels and houses. A supply of formalin, sulphur, and bichloride is kept on hand. The office of the U. S. Marine-Hospital Service is kept in the same building, one end being partitioned off for that purpose. The building is located on the immediate water front convenient to the several steamship agencies, causing but little inconvenience to the traveling public in the issuance of permits and inspection of baggage. All persons leaving this port during the year have been required to procure certificates from this office showing in what degree they are protected from the different quarantinable diseases.

All vessels arriving at this port are immediately boarded by the quarantine officer, the bills of health called for and examined, the passengers and crew mustered, if from foreign ports, and counted, and an inspection made to ascertain the sanitary condition. Recently, in accordance with an order from the chief quarantine officer, the muster and count of the crews of coastwise vessels has been omitted, as causing unnecessary delay, while the island is almost free from quarantinable disease, but inquiry is always made as to sickness, and the passengers are mustered and counted. All baggage for this port is examined and if from an infected or suspected port it must have the label showing inspection or disinfection by the quarantine officer at the port of departure. If this label is absent the baggage is disinfected at this port; if quarantinable disease is found on board it is removed to an island 2 miles from town and placed in tents, a supply of which is kept on hand, and there treated by the officer of the U. S. Marine-Hospital Service, and the vessel is placed in quarantine and disinfected. In the subport, where thorough disinfection is not practicable, the infected persons are removed, the compartments in which the disease was found are disinfected, and the vessel is ordered to the nearest quarantine station where the disinfection can be completed. All baggage from this port is labeled "inspected and passed" unless it has been exposed to infection. In this event the baggage is disinfected and labeled "disinfected and passed" and sealed to prevent opening before arriving at destination.

For boarding vessels the steam launch *Prochazka*, with a crew of 4 men, is kept in commission. As described in my report last year, the *Prochazka* is a vessel 70 feet in length with 10 feet beam. No smaller vessel would answer for the purpose so well, as the anchorage of some vessels is 6 or 7 miles out, and at times the bay becomes very rough. This vessel has been in service at this place since January 24, 1900, and has demonstrated the wisdom of her purchase, as no repairs have been required other than the replacing of a nut on one cylinder rod and the correction of a bend in one propeller blade.

During the period 307 vessels arrived at this port and were inspected and passed, and 327 bills of health were issued to vessels leaving this port. Two thousand one hundred and fifteen passengers arrived at this port. Of these, 735 arrived on the Munson Line from New York. Two thousand four hundred and seventy-one certificates of health and protection by vaccination were issued to passengers leaving this port. Of these, 484 were to passengers for New York by the Munson Line. All baggage for the United States is inspected and labeled, and all that is for points south of Maryland is disinfected.

All persons not protected by previous vaccination have been vaccinated at this office. There have been 23 vaccinations.

Only 11 alien steerage passengers have been registered at this port, but a great many of that class have landed here by coastwise vessels, having entered at Habana.

Of immigrants landed at this port, in my opinion, there have really been none. While most of the passengers arriving by the Munson Line have been Americans and Canadians who have invested in the land and steamship companies, none that I have seen have expressed an intention to renounce their citizenship in the above countries, and not one has taken steps to acquire Cuban citizenship.. In fact, a large portion of these colonists have already returned home, and all have been induced to make investment of small amounts here in the hope of such return as would enable them to live in comfort elsewhere.

While the number of pieces of baggage has not been kept, all have been inspected, and 156 pieces from Habana have been disinfected by steam or formalin. The sanitary condition of the town has been constantly improving under the supervision of the military authorities. It will now compare favorably with towns of the same size in the United States. The streets have been graded and are swept daily, and, as a consequence, the health of the population is much better.

Seventy-six deaths only have been registered during the year, giving a rate of about 15 per 1,000 of estimated population, the deaths of the last six months of 1900 being 39, as against 70 for the first six months, and the number for the six months ended June 30, 1901, being 37.

There were only 2 cases of yellow fever reported during the year—1 discovered on the steamship *Julia*, in October, 1900, at Gibara, and removed by Acting Assistant Surgeon Gomez to isolated quarters, and 1 treated at this place in December, 1900.

No other cases of quarantinable diseases have been reported at any point in the district A constant inquiry has been made for suspicious cases, with instructions to immediately report to the chief quarantine officer any that were discovered.

I have delayed forwarding this report expecting to inclose reports from the subports, but as these have not been received, they will be forwarded as soon as received.

Respectfully,

OWEN W. STONE,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

Supplemental report.

NUEVITAS, CUBA, *September 15, 1901.*

SIR: I have the honor to submit the following report for the period from July 1 to September 15, 1901, inclusive:

Eighty vessels arrived at this port, with 2,583 men in crews; 567 passengers were disembarked; 81 bills of health were issued to vessels, with 2,650 men in crews; 504 certificates of health were issued to passengers embarking. Twenty-four deaths occurred during the above-named period, but there have been no cases of quarantinable disease, and no cases of the milder contagious or infectious diseases have been reported.

Four vessels clearing for Southern ports were disinfected at this station, and 180 bundles of clothing and bedding belonging to them were disinfected by steam at the shore plant. Fifty-nine pieces of baggage from Habana were disinfected.

There has been sunshine with rain nearly every day. The temperature in the shade has not been at any time higher than 93° F. The sanitary conditions at the subports have been about the same as here.

Respectfully,

OWEN W. STONE,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

BARACOA.

MARINE-HOSPITAL SERVICE,
Baracoa, Cuba, August 31, 1901.

SIR: I have the honor to submit the following report for the year ended June 30, 1901:

Three hundred and seventy-five vessels arrived at this port during the year; 380 bills of health were issued to vessels clearing from the port; 1,102 passengers arrived during the year and 846 passengers left the port. One hundred and eighty-six deaths were reported during the year.

No cases of quarantinable disease were found on vessels entering or clearing from this port, and no cases of such disease have been reported in this town or vicinity.

The sanitary condition of the town has been good.

Respectfully,

M. LORES LLORENS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Baracoa, Cuba, September 16, 1901.

SIR: I have the honor to submit the following report of the transactions of the Marine-Hospital Service at this station for the period from July 1 to September 15, 1901, inclusive:

Forty-nine vessels arrived at this port, 46 bills of health were issued, and 39 deaths were reported.

There were no cases of quarantinable disease either in harbor or town.

Respectfully,

M. LORES LLORENS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

GIBARA.

GIBARA, CUBA, *July 25, 1901.*

SIR: Through the chief quarantine officer for the island of Cuba I have the honor to transmit the following report of the transactions at this station for the year ended June 30, 1901:

One hundred and forty-three deaths occurred in the city of Gibara during the time covered by this report. Death rate per 1,000 inhabitants, 18.65. The health of the city has been excellent. There have been no cases of yellow fever or smallpox reported during the year.

On October 13, 1900, the steamship *Julia* arrived at this port from Habana and Nuevitas with a second-class passenger suffering from fever. On inspection the case proved to be yellow fever and was removed as soon as possible and isolated on shore.

The compartment was disinfected and ordered closed until the arrival of the vessel at Santiago de Cuba, at which port she would be thoroughly disinfected.

Four hundred and thirty-five vessels were inspected on arrival and granted pratique; 431 bills of health were issued vessels leaving the port; crews of incoming vessels inspected, 12,079; crews of outgoing vessels inspected, 12,218; passengers of incoming vessels inspected, 5,094; passengers of outgoing vessels inspected, 4,153; persons vaccinated, 35; alien steerage passengers landed, 251; health certificates issued passengers leaving the port, 2,153.

Respectfully,

S. Gomez,

Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

Supplemental report.

Marine-Hospital Service,
Gibara, Cuba, September 16, 1901.

Sir: I have the honor to submit the following report of the transactions of the Marine-Hospital Service at this station for the period from July 1 to September 15, 1901, inclusive:

Eighty-six vessels arrived at this port, 87 bills of health were issued, and 19 deaths were reported.

There were no cases of quarantinable disease in the harbor or town during the period, nor at any time during the year.

Respectfully,

Salvador Gomez,

Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

PUERTO PADRE.

Puerto Padre, Cuba, *August 1, 1901.*

Sir: I have the honor to transmit, through the officer commanding the third district and the chief quarantine officer for the island of Cuba, the following report for the year ended June 30, 1901:

Two hundred and twenty-seven vessels arrived at this port during the year and were inspected and passed, and 225 bills of health were issued to vessels leaving this port; 1,303 passengers disembarked at this port during the year, and certificates of health were issued to 696 passengers leaving this port; 49 passengers, leaving, were vaccinated in this office; there were 19 deaths during the year.

The sanitary condition of the town has been good throughout the year, and there have been no cases of quarantinable disease.

Respectfully,

Jose N. Maceo,

Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

Supplemental report.

Marine-Hospital Service,
Puerto Padre, Cuba, September 16, 1901.

Sir: I have the honor to submit the following report of the transactions of the Marine-Hospital Service at this station for the period from July 1 to September 15, 1901, inclusive:

Sixty-five vessels arrived at this port during the period, 60 bills of health were issued, and 17 deaths were reported.

There were no cases of quarantinable disease reported during the period, nor at any time during the year.

Respectfully,

Jose N. Maceo,

Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

OFFICERS AND ATTENDANTS, SANTIAGO, CUBA.

BANES.

MARINE-HOSPITAL SERVICE,
Banes, Cuba, July 30, 1901.

SIR: I have the honor to submit the following report of the transactions at this station for the year ended June 30, 1901:

Two hundred and seventy-eight vessels arrived and were inspected and passed. Two hundred and sixty-nine bills of health were issued to outgoing vessels.

There were 38 deaths from all causes during the year. No quarantinable or infectious diseases have been reported.

Respectfully,
BENJAMIN DE ZAYAS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Banes, Cuba, October 1, 1901.

SIR: I have the honor to submit the following report of the transactions of this station for the period from July 1 to September 15, 1901, inclusive:

Number of vessels arriving	58
Number of bills of health issued	56
Number of deaths	8

No quarantinable diseases have occurred during this period, and the health of the port and surrounding country is good.

Respectfully,
BENJAMIN DE ZAYAS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

SANTIAGO AND SUBPORTS.

REPORT OF TRANSACTIONS AT THE PORT OF SANTIAGO AND THE SUBPORTS OF THE FOURTH QUARANTINE DISTRICT OF CUBA DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT OF TRANSACTIONS FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Asst. Surg. R. H. VON EZDORF.

MARINE-HOSPITAL SERVICE,
Santiago de Cuba, July 20, 1901.

SIR: I have the honor to make the following report of the transactions at this port and subports, comprising the fourth quarantine division of the island of Cuba, for the period from September 16, 1900, to and including June 30, 1901:

SANTIAGO.

The outfit of the station consists in the shore disinfecting plant, office, disinfecting barge *Rough Rider*, steam launch *Branham*, and a sailboat.

A frame building, 71 feet by 28 feet, located at the foot of Marina street on the water front, is used for offices and for the shore disinfecting plant.

Office:—Three connecting rooms, one room built over the water front, used by the medical officer in command, and two rooms partitioned from the disinfecting room proper by rough lumber, have been used as offices since the erection of this building. This arrangement was found to be inadequate and inconvenient for the amount of work that was performed. In consequence, authority was requested and granted to build an extension to the original building for offices. Work on the new office was begun May 27, 1901, and will be ready for occupation by the end of July. This addition has 16 feet on the water front and extends 28 feet along the width of the original building. Tongued-and-grooved lumber has been used for the whole interior; the space between the ceiling and roof will be used for storing purposes. New writing desks, typewriter desk, and chairs have been received to complete the furnishings of the office.

Shore disinfecting plant.—This is furnished with a 60-inch cylinder, Kinyoun-Francis steam and formalin chamber, and a steam boiler of the vertical tube type. A 500-gallon iron tank was placed in this room for storage of water to supply the boiler, and pipe connections made in order that the launch and office may be continually provided for.

A wharf 10 feet by 32 feet extends along the water front of this building. This wharf is used for landing of passengers and baggage, and for tying up the service launch.

Steam launch Branham.—The launch has been in continuous use for boarding purposes and as a tender to the disinfecting barge *Rough Rider*, except when it was placed on dry dock for cleaning and painting and for repairs. A new propeller was obtained, iron plates for engine-room floor, and a new ash pan was put in, and many other minor improvements made.

Disinfecting barge Rough Rider.—The barge is an old wooden sailing vessel, 112 feet long and 22 feet wide, fitted up with the necessary machinery for a complete floating disinfecting plant.

All the disinfecting apparatus, comprising 2 steam chambers (56-inch Kinyoun-Francis steam and formalin type), sulphur furnace, Worthington duplex pump, and boilers are arranged on the deck of the vessel. Below deck are the fresh-water and bichloride-of-mercury tanks, coal bunkers, and storage spaces.

During the year many changes were made in the hold of the vessel. The ballast spaces were covered with 2-inch planks, which now forms a lower deck to the vessel; port holes were cut for ventilation and light, and a stairway made which leads directly from this floor to the upper deck. Shelves were erected and better storing arrangements made for movable property.

Two wooden cisterns, with a capacity of 1,000 gallons each, were obtained for use as bichloride tanks. The whole vessel has been painted and many other repairs were made by the station force.

Bichloride hose and a new bichloride pump (Worthington, 6 by 4 by 6 inches) was gotten to replace the smaller and unserviceable one. A hand force pump with hose was also obtained for fire protection.

The employees are uniformed. Inspections are made of the barge and a fire drill frequently practiced.

Rowboat.—A good rowboat with sail was purchased, which will be used as a tender to the disinfecting barge *Rough Rider* and for boarding purposes whenever required.

Personnel.—During the winter months or open quarantine season the force at this station is reduced, and, whenever required, temporary laborers are employed to help disinfect vessels sailing for Porto Rico.

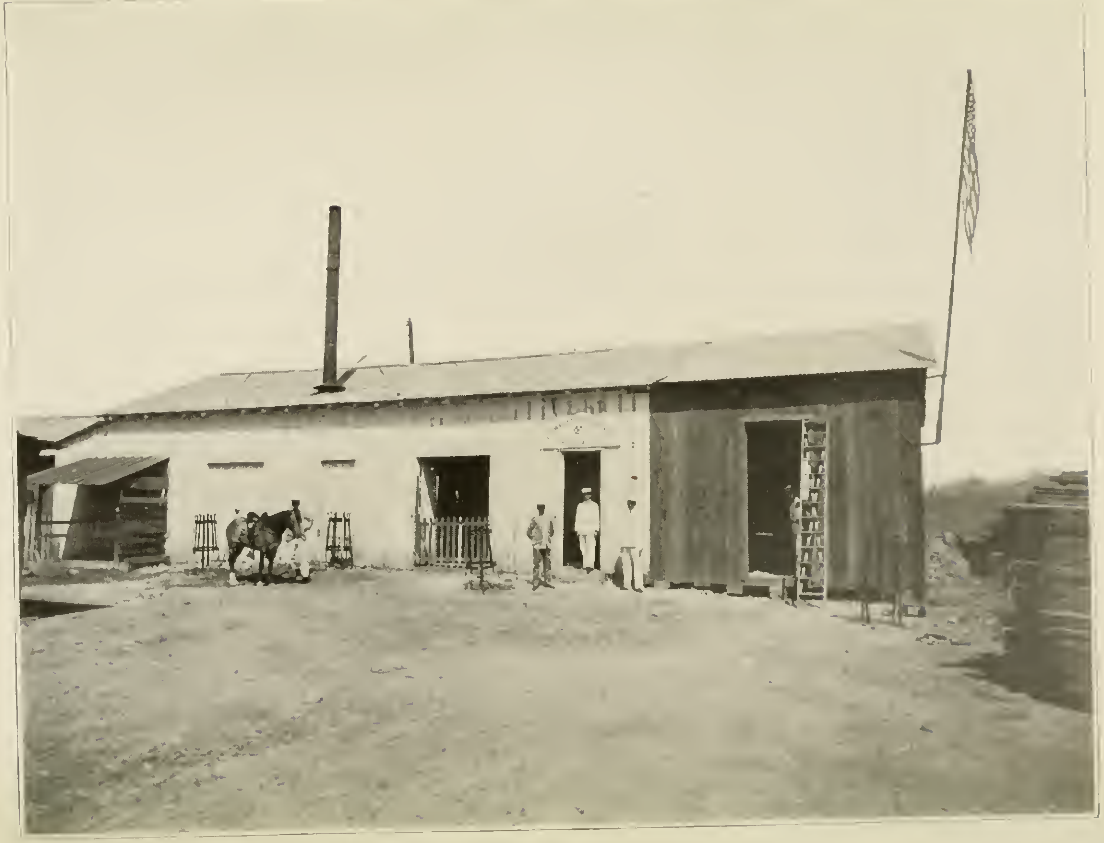
The following-named officers and attendants were on duty at this port on June 30, 1901:

R. H. Von Ezdorf, assistant surgeon, in command; H. S. Caminero, acting assistant surgeon, boarding officer; Richard Wilson, acting assistant surgeon, boarding officer; Leonard Schwan, acting clerk; Louis L. Raffo, engineer of steam launch *Branham;* Axel F. Sohlgren, engineer on disinfecting barge; Francisco Serrano, pilot of steam launch *Branham;* Carlos Planchs, carpenter; Antonio R. Gisbert, captain disinfecting barge; Felix Porte, cook disinfecting barge; Jose G. Garcia, seaman, disinfecting barge; Ernesto Cabrera, seaman, disinfecting barge; Antonio Verdera, seaman, disinfecting barge; Pedro Hernandez, watchman office and shore plant; Ramon Serrano, attendant steam launch *Branham;* Crescencio Premion, temporary carpenter, assists in erecting extension to office on shore disinfecting plant.

Inspection of incoming vessels.—All vessels arriving at this port are inspected between the hours of sunrise and sunset, before pratique is given. This inspection consists in the examination of papers, mustering of passengers and crew, who are counted and given a visual examination, and a general inspection of the vessel made. During this period eleven vessels were held on account of suspicious illness, or to complete the five-day period after leaving Habana.

On October 15, 1900, the provisional flag steamship *Julia* arrived from Habana via north coast ports. At Gibara a case of yellow fever was removed from this vessel and the cabin disinfected. After inspection at this port the vessel was permitted to discharge her cargo in quarantine, and all immune passengers, so certified to, were permitted to land. Six nonimmunes were held in detention aboard the barge *Rough Rider* to complete a five-day period since leaving Gibara. The vessel was disinfected (three hours after arrival) prior to sailing for Porto Rico.

On January 22, 1901, the British steamship *Homeric* arrived from Vera Cruz, Mexico, at which place a case of yellow fever had been removed just prior to departure. All persons were found in good health. The vessel was disinfected prior to receiving pratique.



OFFICE AND SHORE DISINFECTING PLANT, SANTIAGO, CUBA.

On February 4, 1901, the Spanish steamship *Gaditano* was held on arrival for disinfection.

The following are the statistics of the arrival and departure of vessels for this port:

Month.	Inspected and passed.	Passed without inspection.	Inspected and held.	Crew.	Passengers.	Vessels disinfected.
1900.						
September 16 to 30	22		1	817	543	
October	46		4	1,582	1,023	3
November	55		2	1,783	1,669	2
December	68		1	2,175	1,810	2
1901.						
January	48		2	1,685	1,445	3
February	58		1	2,042	2,200	3
March	72			2,838	1,755	2
April	64			2,079	1,736	9
May	57	3		1,943	858	8
June	40	11		1,553	832	3
Total	530	14	11	18,497	13,871	35

Month.	Bills of health issued to ports controlled by United States.	Number of crew inspected.	Bills of health issued to foreign ports.	Number of crew inspected.
1900.				
September 16 to 30	15	702	1	9
October	34	1,331	5	52
November	35	1,454	5	38
December	44	1,652	6	98
1901.				
January	34	1,409		
February	36	1,607		
March	47	2,390	2	80
April	44	1,588		
May	45	1,787		
June	38	1,527		
Total	372	15,447	19	277

Out quarantine.—Vessels destined for the United States or ports controlled by the United States are given, during inspection hours only, the consular or supplemental form of bill of health in duplicate. These are given immediately, or as near as possible before the sailing hour of the vessel. All persons on board are given a visual examination and counted before issuance of bill of health.

Since June 10, 1901, coastwise vessels enter without inspection and the quarantine declaration is signed by the master of the vessel at the office of the Marine-Hospital Service as early as practicable after arrival. These vessels also receive supplemental forms of bill of health when sailing for a port outside of this district.

Inspection and certification of passengers.—Owing to the healthful conditions prevailing over the island, the supervision of passenger traffic on the island was discontinued. One thousand two hundred and fifty-five Cuban cards (561 special permits and 694 probably immune) were issued to passengers during the period from February 20, 1901, to June 10, 1901.

During the close quarantine season passengers for the United States, and during the entire year passengers for Porto Rico, were examined as to the health and protection from smallpox and a red certificate given, and, in addition, such passengers who could show satisfactory evidence as to their immunity to yellow fever were given white certificates.

A ruling was made that passengers could obtain health certificates the day prior to sailing. On presentation of the applicant for a health certificate he is examined and the certificate is filled out by one of the assistants. The passenger then presents himself to the medical officer in command, who makes a visual examination and signs the certificate, and determines what disposition is to be made of the baggage.

Statistics of certificates issued.

Month.	Immune.	Non-immune.	Total.
1900.			
September 16 to 30	3	35	38
October	27	48	75
November	24	....	24
December	33	....	33
1901.			
January	19	....	19
February	18	....	18
March	10	2	12
April	12	93	105
May	42	114	156
June	47	112	159
Total	235	404	639

Disinfection and inspection of baggage.—The work of disinfection and inspection of baggage is done in accordance with Article X, United States Quarantine Regulations to be Observed at Foreign Ports and at Sea, and during the entire year all vessels and baggage for Porto Rico are disinfected.

All labels are stamped and dated. A yellow label with the words "Disinfected and passed" is used for disinfected baggage. This label is so pasted on the container that it would be torn on opening. The red label with the words "Inspected and passed" is pasted on all baggage so treated.

Statistics.

Month.	Disinfected and passed.		Inspected and passed.
	Formaldehyde gas.	Steam.	
1900.			
September 16 to 30	8	2	79
October	44	21	137
November	152	27	82
December	131	41	103
1901.			
January	46	57	37
February	63	299	123
March	45	17	75
April	59	24	224
May	10	72	257
June	15	52	263
Total	573	612	1,380

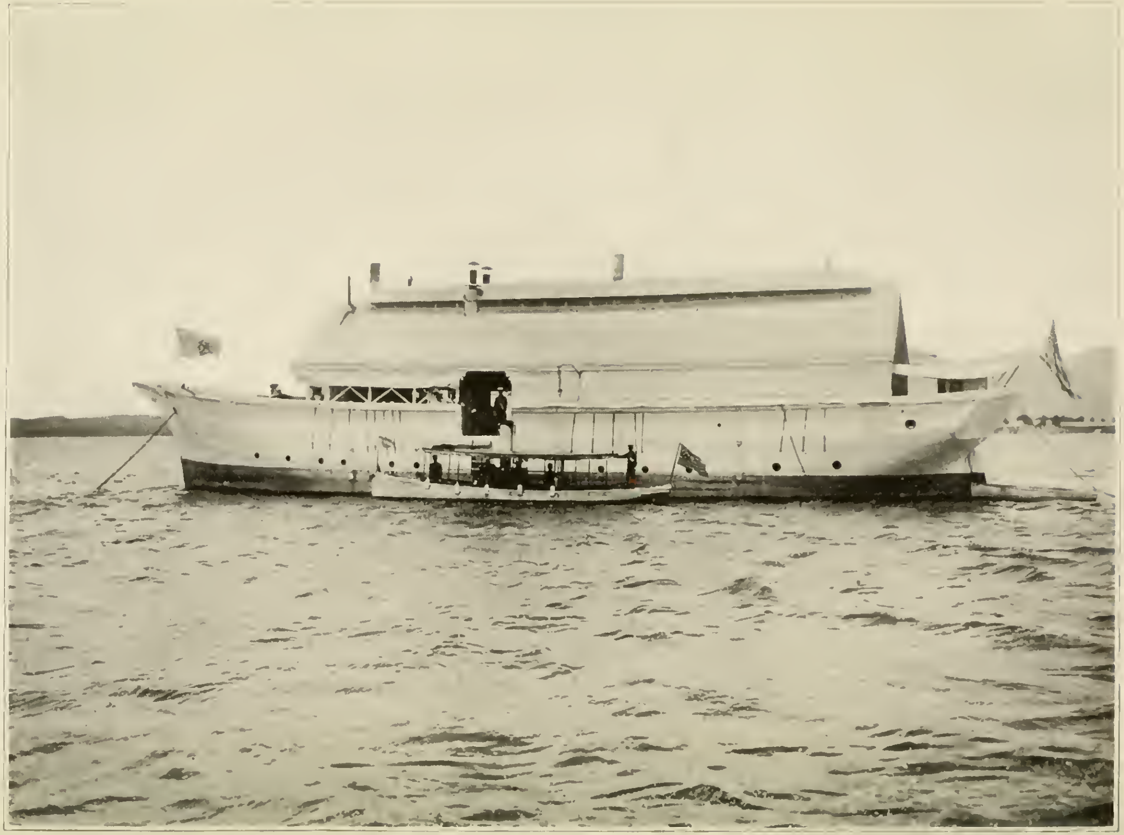
Disinfection of vessels.—During the period from September 16, 1900, to June 30, 1901, 17 vessels were disinfected prior to departure for Porto Rico, 15 vessels were disinfected prior to sailing for southern ports in the United States, and 4 vessels were disinfected on arrival at this port.

General remarks upon sanitary condition of the port.—The continued absence of yellow fever since December 27, 1899, makes a remarkable showing for a port formerly known as an endemic center of yellow fever. Intestinal diseases, malarial fevers, and tuberculosis have been the prevailing diseases.

The great amount of work that has been done in the city is responsible for the improved healthful conditions. Among them I may mention the paving of the streets with asphalt, which, together with the natural topography of the country, materially aids in rapid drainage.

The work done by the sanitary department, operating under the supervision of the Medical Department, U. S. Army, in maintaining cleanliness of the streets and houses is a no less important factor.

The water supply remains a problem. This was emphasized during the drought which prevailed between the months of November, 1900, and June, 1901, when the



DISINFECTING BARGE ROUGH RIDER AND LAUNCH BRANHAM, SANTIAGO, CUBA.

supply was limited for certain hours in the day in the various districts into which the city was divided. Since the increased rainfall the supply has been about 18 gallons per capita per diem.

Another great need of the city is a sewer system. Work on this line has been progressing since the American occupation. A good deal of sewer pipe was laid prior to asphalting the streets, but one of the main sewers into which some of these empty was yet to be provided. Since May 1, 1901, such sewer has been in construction and will not be completed much before the 1st of September, 1901. This work necessitated the tearing up of the whole length of one street which is in the lower part of the city and runs parallel to the water front for a distance of 4,800 feet. The work of the upheaval of soil into which all seepage from the city naturally drains was looked upon with suspicion and belief that it would be the origin of an epidemic of yellow fever. So far nothing of the kind has occurred. Some relief may be looked for, upon the completion of this sewer and the erection of a pumping station for emptying sewage into the bay, from that of the present unsanitary arrangement—that of vaults in the houses. Nearly all the houses are one-story structures, and fouling of the air by the emanations from these vaults, breathed by such occupants, naturally lowers the vital resistance of the individual. This influence, I believe, accounts for the large mortality from tuberculosis which this year has caused more than 20 per cent of all deaths in the city.

The following mortality table shows the principal causes of deaths during the period from September 16, 1900, to June 30, 1901:

Mortality table—Santiago de Cuba.

	Deaths from—																
	Typhoid fever.	Fever, malarial.	Whooping cough.	Diphtheria and croup.	Grippe.	Leprosy.	Tuberculosis.	Meningitis.	Tetanus.	Organic diseases of the heart.	Bronchitis.	Pneumonia.	Intestinal diseases.	Nephritis.	Bright's disease.	Other causes.	Total.
1900.																	
September 16 to 30	1	3	....	....	....	....	4	....	1	4	3	4	2	2	....	13	37
October	2	8	....	1	1	....	15	1	2	3	2	6	3	2	....	10	56
November	....	12	....	....	....	1	20	1	1	4	3	....	2	2	....	18	64
December	....	9	....	1	....	....	8	....	2	4	2	2	8	2	2	24	64
1901.																	
January	....	17	....	1	....	....	23	2	....	6	....	6	9	....	4	12	80
February	....	8	....	1	....	....	19	1	....	2	....	7	12	4	....	15	69
March	....	12	....	1	....	....	10	1	1	....	2	6	13	....	4	19	69
April	1	7	....	1	....	....	16	....	6	3	2	6	16	2	3	17	80
May	....	9	....	1	1	....	22	1	2	6	1	9	14	1	7	17	91
June	....	15	....	....	3	....	9	....	....	4	....	3	17	1	2	21	75
Total	4	100	....	7	5	1	146	7	15	36	15	49	96	16	22	166	685

Estimated population, 43,000; rate of mortality, 20.09 per 1,000.

It is understood that the same regulations applying at this port are also enforced, as far as practicable, at the subports. However, should vessels require disinfection, they are to be remanded to this port for treatment.

MANZANILLO.

Acting Asst. Surg. R. de Socarras is in charge. He reports the sanitary condition of this port excellent. There were 219 deaths reported during this period, giving an annual rate of mortality of 19.08 per 1,000, Estimated population, 14,464.

The following are the statistics of the arrival and departure of vessels for this port:

Month.	Inspected and passed.	Passed without inspection.	Crew.	Passengers.	Bills of health issued to ports controlled by United States.	Number of crew inspected.	Bills of health issued to foreign ports.	Number of crew inspected.
1900.								
Sept. 16 to 30...	13	....	279	102	17	300	2	33
October.......	34	....	680	265	27	621	6	78
November	34	....	827	236	31	789	....	....
December.....	43	....	956	693	32	857	3	46
1901.								
January.......	41	....	794	484	43	805	2	33
February	49	....	905	529	37	737	4	111
March	47	....	1,060	625	51	1,019	3	72
April..........	43	....	898	512	36	808	5	115
May...........	32	....	851	663	35	838	1	19
June	20	8	726	459	20	558	1	10
Total....	356	8	7,976	1,568	329	7,332	27	517

GUANTANAMO.

Acting Asst. Surg. Luis Espin is in charge.

Guantanamo being 15 miles inland, the inspecting station for this port is located at Caimanera, a small port town on Guantanamo Bay.

Improvement in the sanitary condition of Guantanamo is reported. Malarial fevers prevail.

A building is rented for use as an office and a rowboat hired for boarding purposes.

Statistics of vessels entered and cleared.

Month.	Inspected and passed.	Passed without inspection.	Crew.	Passengers.	Bills of health issued to ports controlled by United States.	Number crew inspected.	Bills of health issued to foreign ports.	Number crew inspected.
1900.								
September 16 to 30	8	....	254	188	4	174	....	....
October	21	....	606	531	9	348	....	....
November	23	....	641	680	9	452	3	16
December.....	21	....	638	1,115	11	458	2	33
1901.								
January	27	....	726	960	15	471	2	12
February	27	....	646	780	14	460	....	....
March	27	....	774	708	15	557	2	40
April	21	....	639	462	12	472	....	....
May...........	14	8	629	407	14	453	1	7
June	6	12	507	351	10	347	....	....
Total....	195	20	6,060	6,182	113	4,192	10	108

DAIQUIRI.

Acting Asst. Surg. Juan J. de Jongh is in charge.

Vessels arriving at this port call for iron ore, which is mined within 5 miles of the dock.

The population is made up of the employees of the company operating the mines. Few deaths have occurred. Malarial fevers prevail, though wounds due to accidents claim most of the inmates of the hospital.

The following are the statistics of vessels entered and cleared at this port:

Month.	Inspected and passed.	Crew.	Passengers.	Bills of health issued.	Number of crew inspected.
1900.					
September 16 to 30	2	46		3	71
October	8	198		8	198
November	8	197	1	8	197
December	6	144		6	144
1901.					
January	7	152		6	143
February	4	93		4	93
March	6	166	394	6	166
April	7	180		6	152
May	10	293	129	11	321
June	7	191		7	191
Total	65	1,660	524	65	1,676

I can only repeat what was said in a previous report, that in all matters the Service is cooperating with the civil and military authorities, and at no time has my action in quarantine matters been questioned.

Respectfully,

R. H. Von Ezdorf,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General, U. S. Marine-Hospital Service.

Supplemental report.

Marine-Hospital Service,
Santiago de Cuba, October 1, 1901.

Sir: I have the honor to make the following supplemental report of the transactions at this port and subports, comprising the fourth quarantine division of the island of Cuba, for the period from July 1, 1901, to and including September 15, 1901.

SANTIAGO.

The outfit of the station, comprising buildings, disinfecting barge *Rough Rider*, and steam launch *Branham*, is described in my previous report for the period ending June 30, 1901.

The new office, which was under construction at that time, has been completed and is now occupied by the office force, and fully meets the desired requirements.

Early in August it was noticed that the disinfecting barge *Rough Rider* was leaking considerably. It required the operation of a pump and siphon continuously, day and night, to save the barge from sinking. Authority was obtained to employ a diver to examine for and repair leaks. The work was satisfactorily done. The bottom of this vessel is in a very foul condition and the vessel will have to be docked after this quarantine season in order that it may be cleaned, painted, and new copper sheets placed where required.

The employees are kept busy making repairs, painting, etc., when there is no disinfection work on hand.

The personnel remains the same with exception of the watchman, Jose Escarre, being employed to fill vacancy caused by resignation of Pedro Hernandez.

The following are the statistics of the operations of this station for this period:

	July.	August.	September 1 to 15.	Total.
Vessels inspected on arrival	30	37	13	80
Vessels passed without inspection	17	21	9	47
Bills of health issued	35	39	14	88
Vessels held for observation	....	....	....	....
Vessels quarantined	....	....	....	....
Vessels disinfected	5	5	1	11
Crews of incoming vessels inspected	1,088	1,258	341	2,687
Crews of incoming vessels passed without inspection	501	667	275	1,446
Passengers of incoming vessels inspected and passed	1,009	464	176	1,649
Passengers of incoming vessels passed without inspection	838	744	478	2,060
Crews of outgoing vessels inspected	1,325	1,476	508	3,309
Certificates of vaccination issued:				
Immune	20	39	33	92
Nonimmune	78	109	23	210
Applicants for immune certificates rejected	29	42	2	73
Persons vaccinated	3	17	1	21
Immigrants inspected	555	174	60	789
Pieces of baggage disinfected	79	62	3	144
Pieces of baggage inspected and passed	110	213	98	421
Quarantinable diseases reported	....	....	....	....
Deaths in city	107	100	38	245

No provision has been made for the location of a detention camp. The ground recommended for the location of such camp in my supplemental report of last year has become unavailable.

I still believe Magazine Island to be the best location for the needs of the Service here, but I suppose the permission for use of a portion of this island would not be reconsidered by the Army authorities.

The Army still maintains the yellow-fever hospital established on Cayo Duan, across the bay and 2 miles from the city. Maj. and Surg. L. C. Carr, U. S. Volunteers, has kindly offered to give me all assistance for the care and treatment of sick suffering from any quarantinable disease which may arrive at this port.

The health and sanitary condition of the port remains good. Malarial fevers and tuberculosis are the prevailing diseases.

MANZANILLO.

Acting Asst. Surg. R. de Socarras is in charge. The following are the statistics of the operations at this port:

	July.	August.	September 1 to 15.	Total.
Vessels inspected on arrival	13	25	10	48
Vessels passed without inspection	19	10	1	30
Bills of health issued	29	30	13	72
Crews of incoming vessels inspected	214	567	184	965
Crews of incoming vessels passed without inspection	368	188	40	596
Passengers of incoming vessels inspected and passed	18	264	184	466
Passengers of incoming vessels passed without inspection	360	234	52	646
Crews of outgoing vessels inspected	495	640	247	1,382
Immigrants inspected	3	....	4	7
Deaths in city	30	27	7	64

GUANTANAMO.

Acting Asst. Surg. Luis Espin is in charge.

The following are the statistics of the operations at this port:

	July.	August.	September 1 to 15.	Total.
Vessels inspected on arrival	5	11	3	19
Vessels passed without inspection	12	15	6	33
Bills of health issued	7	17	4	28
Crews of incoming vessels inspected	234	303	92	629
Crews of incoming vessels passed without inspection	258	331	137	726
Passengers of incoming vessels inspected and passed	106	56	33	195
Passengers of incoming vessels passed without inspection	371	642	359	1,372
Crews of outgoing vessels inspected	326	452	121	899
Immigrants inspected	2	....	....	2
Deaths in city	30	21	13	64

DAIQUIRI.

Acting Asst. Surg. Juan J. de Jongh is in charge.

The following are the statistics of operations at this port:

	July.	August.	September 1 to 15.	Total.
Vessels inspected on arrival	9	8	2	19
Bills of health issued	8	8	2	18
Crew of incoming vessels inspected	289	222	62	573
Crew of outgoing vessels inspected	258	223	63	544
Immigrants inspected	193			193
Deaths	1	3	3	7

Respectfully,

R. H. von Ezdorf,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

CIENFUEGOS AND SUBPORTS.

Report of Transactions at the Port of Cienfuegos and the Subports of the Fifth Quarantine Division of Cuba during the Fiscal Year ended June 30, 1901; also Supplemental Report of Transactions from July 1 to September 15, 1901, inclusive.

By Asst. Surg. T. D. Berry and Acting Asst. Surg. E. F. Nunez.

Marine-Hospital Service,
Cienfuegos, Cuba, July 1, 1901.

Sir: I have the honor to transmit the following report of the transactions at this station and substations, which includes Casilda, Santa Cruz del Sur, Tunas de Zaza, and Jucaro (although at the latter port there is no officer stationed), for the fiscal year ended June 30, 1901.

Cienfuegos is nearly always the last port in the island touched at by those vessels making the round trip of the island, prior to sailing for the United States for cargo.

There are five Spanish lines and one English line having monthly or bimonthly vessels sailing from this port to the United States, and, in addition, there is a monthly service to Galveston and Mobile.

Taking as an average of the past few years, there are 60 to 70 vessels leaving this port for the Southern ports during the active quarantine season.

During the summer of 1899 2 steamships, 2 tugs, and 3 schooners were disinfected.

During the season of 1900 there were disinfected 12 steamships and 2 sailing vessels.

Already this season, hardly begun, there have been disinfected 7 large steamships, and with one exception (the *Hugin*) they have been vessels averaging 2,700 tons each net.

The gain in time of these steamers, averaging three days each, is doing much to aid the commerce at this port; at the same time in no way lessening the efficiency of the system or the safety of the Southern States.

The equipment for this station is: Steam launch *Urqhuart*, length 40 feet, 6-horsepower engine, speed 9 miles per hour. One 16-foot Whitehall boat; two pairs oars. The launch is ordinarily used in making inspections, the rowboat being used as an auxiliary.

There is erected on the inside of the horseshoe-shaped Government wharf a building 36 by 20 feet, having wharf for vessels drawing 10 feet of water. This building contains a Geneste-Herscher steam chamber and boiler that was moved from an old Spanish hospital at Santa Clara; chamber is 7 feet 10 inches long and 5 feet in diameter. It is fitted up with an exhaust jet capable of making a vacuum of 17 inches, also 29 sulphur pots and 2 "Challenge" hand pumps, with 300 feet rubber hose for bichloride washings, 3 "Kinyoun-Francis" autoclaves, large size, for formaldehyde disinfection.

The need of a disinfecting barge for this purpose was early recommended. This barge, now named the *Sentinal*, formerly the three-masted schooner *Jennie Middleton*, was altered and equipped by the Kensington Engine Works, Philadelphia. In company with the disinfecting barge *Guardian* it was towed to Cuba in November last, arriving at Cienfuegos in good condition December 8, 1900.

January, 1 vessel was disinfected; April, 1 vessel was disinfected; May, 2 vessels disinfected, and June, 3 vessels.

The *Sentinal* has for equipment two Kinyoun-Francis steam chambers lashed to the main deck, a little forward of amidships. Forward of the chambers is the foremast and forward hatch, with ladders leading to holds. In the between-decks are stored the disinfectants, sulphur, glyco-formol, bichloride, carbolic acid, etc. In the lower hold, a little forward of amidships, are two 2,000-gallon tanks placed on each side of the keel, containing supply of fresh water in one, the other used as a tank for solutions. In lower hold aft are 30 tons of dust coal brought here with vessel as ballast. Ten feet above main deck is a substantial wooden awning on which are laid the galvanized sulphur pipes. This awning or hurricane deck is canvas covered and painted, and, together with a partition forward and side curtains leading to the main deck, serves to protect the machinery from the effect of wind and weather. There are also drainage pipes leading from this hurricane deck to the water tanks which enable us to catch during the rainy season practically all the water necessary for consumption on the barge.

In addition, the barge is equipped with 50 feet of 6-inch rubber sulphur pipe; also ten lengths of 10 feet each, 6-inch spiral galvanized-iron pipe, with flange connections; also eight 5-foot lengths 6-inch rubber pipe. These valuable accessories make it possible for us to disinfect two holds at one time, heretofore out of the question from the scanty supply of pipe. Also 200 feet 1½-inch rubber canvas-covered hose for bichloride washings.

Barge is anchored in 27 feet of water about half a mile from our wharf, and while this location is inconvenient from its distance yet at the same time vessels of the largest size can come alongside, thus avoiding the necessity of moving the barge alongside the vessel, as has been done heretofore.

Although there is no buoy there are two anchors, one very large and strong, while the second one is of fair size.

The distance from shore is also an added safeguard, inasmuch as the distance would preclude the carriage of any infectious disease from the city, should any such disease exist or arise in the future.

The office of the U. S. Marine-Hospital Service at this port is in the building formerly used as quarters by the Spanish marines during the Spanish occupation of Cuba.

This building has seven large rooms, five of which are in use for offices and laboratory purposes. Two rooms are in use as storerooms for articles to be used at the detention camp, also articles to be put on the condemnation reports.

There are also four small rooms, closets and bathroom, kitchen, etc.

This building is situated directly behind the custom-house, and is about 200 yards distant from the wharf upon which is situated the shore disinfecting plant, being very conveniently located to meet the requirements of the service at this port.

Method of inspection.—Vessels from foreign ports, United States ports direct, or foreign or United States vessels touching at other Cuban ports, fly the yellow flag on entering the harbor, and on coming to anchorage, which is usually from one-half to 1½ miles from wharves, are boarded by the quarantine officer.

Vessels are inspected in the regular way (1) by the examination of the papers; (2) muster of the crew and passengers as called for by the bill of health. The sanitary condition of the vessel is noted, and if all is satisfactory the regular certificate of discharge from quarantine is given.

Transports have been granted pratique on the certificate of the medical officer on board.

Vessels from United States ports are inspected with special reference to smallpox; those from tropical ports particularly for yellow fever.

In the event of a vessel arriving with a contagious disease on board, a temporary camp, of which the equipment is in readiness, can be set up on Alcatraz Island, where the patient can be removed and isolated. This island, though belonging to private individuals in this city, is uninhabited, in an isolated position, and is high and dry (10 feet above mean tide).

Bills of health.—No vessel is allowed to clear from the custom-house without first securing a bill of health from this office.

Personnel.—Thomas Dorsey Berry, medical officer in command, U. S. Marine-Hospital Service; E. F. Nunez, acting assistant surgeon, U. S. Marine-Hospital Service, Alejandro Cantero, acting assistant surgeon, U. S. Marine-Hospital Service, Casilda, Cuba; Juan R. Xiques, acting assistant surgeon, U. S. Marine-Hospital Service, Santa

Cruz del Sur, Cuba; Lanson E. McCay, temporary junior hospital steward, U. S. Marine-Hospital Service; Lucius T. Berthe, disinfector, U. S. Marine-Hospital Service; Angel Torres, engineer steam launch *Urquhart;* Monica Riva, engineer disinfection; Justo Sabate, pilot steam launch *Urquhart;* Miguel Duranano, seaman, disinfecting barge *Sentinel;* Patrico Fonecaca, seaman, disinfecting barge *Sentinel;* Jorje de Leon, seaman on steam launch *Urquhart;* Rafael Ulloa, fireman steam launch *Urquhart;* Francisco Galan, messenger at office.

Statistics and summary of the transactions at this station for the period from September 15, 1900, to June 30, 1901.

Deaths (179 occurred in the civil hospital, in which patients are received from all parts of this province)	857
Cases of yellow fever (3 in 1900 and 5 in 1901)	8
Vessels inspected, passed, and granted pratique	601
Crews of vessels inspected and passed	12, 780
Passengers inspected and passed, arriving at Cienfuegos	5, 687
Alien steerage passengers inspected and passed, allowed to land	102
Bills of health issued vessels leaving Cienfuegos	677
Vessels disinfected prior to departure	12
Health certificates issued passengers embarking	2, 629
Pieces of baggage inspected and passed, leaving Cienfuegos	3, 438
Pieces of baggage disinfected	807
Pieces of baggage from Habana, destination Manzanillo and Santiago, labeled "to be disinfected at destination"	788

Respectfully,

T. D. Berry,
Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

CASILDA.

Marine-Hospital Service,
Casilda, Cuba, June 30, 1901.

I have the honor to forward the annual report of the transactions carried out at Casilda quarantine station, under my charge, as follows:

Foreign vessels inspected	21
Crews	459
Passengers	73
Coastwise vessels inspected	374
Crews	6, 704
Passengers	7, 147
Bills of health issued	395

No vessel has been held on account of any epidemic or contagious diseases, so that the sanitary condition of this port for the year ended June 30, 1901, has been excellent in all respects.

The inspection of vessels when circumstances demand it are generally carried out in the following manner:

When a vessel is boarded, we inquire as to the port of departure and intermediate ports; whether there is or has been any sickness on board; examine the bill of health; have crew (and passengers, if there are any) mustered and carefully inspected to determine if there is anyone sick or indicates having been sick; this constituting what we may call the external inspection of the vessel. Then we proceed to inspect the different compartments to ascertain as to their cleanliness, source and quality of the food and water supply; then the log book, to determine the route of navigation.

In case a vessel should arrive with a contagious disease on board, she would immediately be ordered to a distance of at least 1 mile from the wharf, forbidding absolutely all communication with the shore until further orders. The circumstances would be telegraphed to you immediately, asking you for instructions. As we have no sanitary police at our disposal here, help would be asked from the custom-house officials to keep a close watch on the vessel while awaiting orders.

It is interesting, from a sanitary and quarantine point of view, to state the necessity of a suitable vessel, with the personnel to manage it, for boarding purposes. The same employees could do the work of sanitary police for this station.

This port is greatly in need of a good dredging in order to have the depth it formerly had, to allow vessels of all sizes to come to an anchorage inside the bay, in accessible distance for their inspection and supervision, and that they may not have any possible excuse to anchor at a distance of from 10 to 12 miles outside the bay, where sanitary inspection becomes difficult, almost impossible at times, always dangerous and entailing a great loss of time, unless there happens to be a small steamer or launch about, which would kindly be loaned to us in order to fulfill our duties.

Respectfully,

ALEJANDRO CANTERO,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

SANTA CRUZ DEL SUR.

MARINE-HOSPITAL SERVICE,
Santa Cruz del Sur, Cuba, July 1, 1901.

SIR: Although this is not in reality a quarantine station, but an inspection station, I would be compelled to order a vessel with contagious disease on board to a quarantine station like Cienfuegos, where there will be found every facility, as in the United States ports, for handling vessels as circumstances may demand.

Having determined the nature of the contagious disease, which is accomplished in carrying out our sanitary visit by inspecting the ship, cargo, passengers and crew, baggage, manifests and other documents, food and drinking water, I would order the vessel to an anchorage in a certain place assigned for infected ships, where she is to remain until the passengers land and the vessel is disinfected. All direct communication between the ship and any person or the town will be forbidden unless it be authorized and supervised by me.

My method of inspecting vessels is as follows:

When dealing with coastwise vessels, I only make a slight inspection of the ship and papers; in handling foreign vessels, inspection is made of the cargo, crew, passengers and their personal effects, bill of health and other documents, food and drinking water.

The number of incoming and outgoing vessels inspected at Santa Cruz del Sur during the period from September 15, 1900, to June 30, 1901, will be shown in the following list:

Month.	Foreign vessels.		Coastwise vessels.	
	Entered.	Cleared.	Entered.	Cleared.
1900.				
September (15 days)	1	1	9	8
October	2	2	21	21
November	1	1	23	25
December	2	1	23	22
1901.				
January	4	4	24	25
February	6	5	21	20
March	8	3	23	24
April	6	9	19	19
May	4	6	21	20
June	2	5	18	19
Total	36	37	202	203

Respectfully,

JUAN R. XIQUES,
Acting Assistant Surgeon, Marine-Hospital Service.

MEDICAL OFFICER IN COMMAND U. S. MARINE-HOSPITAL SERVICE,
Cienfuegos, Cuba.

TUNAS DE ZAZA.

MARINE-HOSPITAL SERVICE,
Tunas de Zaza, Cuba, July 1, 1901.

I have the honor to report the following transactions for the year ended June 30, 1901, as follows:

Foreign vessels inspected	20
Coastwise vessels inspected	3

There has been no contagious or infectious disease on board any vessel entering this port during the past year.

The sanitary condition of this locality has been excellent throughout the whole year.

My method of inspecting vessels is as follows:

After examining the bill of health, the passengers, if any, are inspected, then the crew, and lastly the vessel, giving the same free pratique if everything is all right on board.

In case a vessel should arrive with a contagious or infectious disease, she would be placed under the most strict quarantine in open bay, and the circumstances would be telegraphed to you for instructions.

Respectfully,

MONTINIANO CANIZARES.
Acting Assistant Surgeon, Marine-Hospital Service.

Supplemental report.

CIENFUEGOS AND SUBPORTS.

MARINE-HOSPITAL SERVICE,
Cienfuegos, Cuba, September 17, 1901,

SIR: In compliance with Bureau letter dated Washington, September 6, 1901, I have the honor to submit herewith the following supplemental report of the transactions at this station and substations at Casilda and Santa Cruz del Sur, for the period from July 1, 1901, to September 15, 1901, inclusive.

With the exception of the two cases of yellow fever duly reported in July, no other contagious or infectious diseases have occurred within this division.

Owing to the improved sanitary conditions and the absence of epidemics throughout the island, the issuance of health certificates and labeling of baggage to coastwise passengers was discontinued by orders from the office of the chief quarantine officer during the first part of July.

It is evident that, in view of the results obtained by the recent experimental researches in Havana as to the etiology of yellow fever, our quarantine procedures now in use will probably be modified in the near future, in accordance with the progress of our knowledge of that disease.

Would invite attention to the increase in the number of vessels disinfected at this station during the month of August, owing to our present control of the Gulf coast ports.

Having disinfected six during August, with prospects of as many or more this month, I am positive the number of vessels will be more than doubled next quarantine season.

Following are statistics of this station and substations for the within-mentioned period:

	July.	August.	Sept. 15.	Total.
CIENFUEGOS.				
Deaths in city	80	85	20	185
Deaths in civil hospital	19	20	3	42
Vessels inspected and passed	37	44	30	111
Members of crews	1,181	1,397	957	3,535
Passengers	433	485	456	1,374
Alien steerage passengers	0	2	16	18
Bills of health issued	75	74	33	182
Vessels disinfected	2	6	2	10
Health certificates issued	132	15	2	149
Pieces baggage disinfected	0	6	0	6
Baggage inspected and passed	197	17	5	219
CASILDA.				
Deaths in city of Trinidad	24	28	9	61
Vessels inspected and passed	31	51	19	101
Bills of health issued	2	2	17	21
Alien steerage passengers	0	0	0	0
SANTA CRUZ DEL SUR.				
Deaths at this port	4	3	1	8
Vessels inspected and passed	24	24	5	53
Bills of health issued	1	1	0	2
Alien steerage passengers	0	0	0	0

Respectfully,

E. F. NUNEZ,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL, U. S. MARINE-HOSPITAL SERVICE.

PORTO RICO.

APPOINTMENT OF CHIEF QUARANTINE OFFICER AND ORGANIZATION OF THE SERVICE.

Following the plan adopted in Cuba, the national quarantine service in Porto Rico was placed under one general head, the medical officer in command at San Juan being designated chief quarantine officer for Porto Rico October 27, 1900.

In order to systematize the work at the various stations, the following circular of instructions was issued:

[Circular.]

ORGANIZATION AND CONDUCT OF THE NATIONAL QUARANTINE SERVICE, PORTO RICO.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL, M. H. S.
Washington, D. C., October 20, 1900.

To Medical Officers of the Marine-Hospital Service,
Collectors of Customs, and Others Concerned:

Section 10 of the act of Congress approved April 12, 1900, entitled "An act temporarily to provide revenues and a civil government for Porto Rico, and for other purposes," is as follows:

"SEC. 10. That quarantine stations shall be established at such places in Porto Rico as the Supervising Surgeon-General of the Marine-Hospital Service of the United States shall direct, and the quarantine regulations relating to the importation of diseases from other countries shall be under the control of the Government of the United States."

Under the provisions of the foregoing section and in accordance with the act of Congress approved February 15, 1893, entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," the following instructions are hereby issued for the government of the quarantine service in Porto Rico:

1. Quarantine stations are hereby established at the following ports: San Juan, Ponce, Aguadilla, Arecibo, Arroya, Humacao, Mayaguez, Baracoa, Fajardo, and Guanica.

2. The quarantine regulations of the Treasury Department issued November 13, 1899, and as subsequently or hereafter to be amended, shall be enforced at Porto Rican ports.

3. The general conduct of the quarantine service in Porto Rico shall be in accordance with the regulations governing the Marine-Hospital Service, in so far as they are applicable.

4. One officer will be detailed by the Surgeon-General of the Marine-Hospital Service as chief quarantine officer of Porto Rico in addition to his duties as quarantine officer at the port of San Juan.

5. Routine work at each port is to be conducted by the officer in command at such port, under the quarantine regulations and the regulations for the government of the Marine-Hospital Service.

6. Special questions regarding administration, detention of vessels in quarantine, methods of disinfecting unusual cargoes, etc., are to be submitted when practicable, and with recommendations, to the chief quarantine officer for decision, and when acted upon shall be promptly reported to said chief quarantine officer. The port quarantine officer will abide by the decision of the chief quarantine officer, the right of appeal to the Bureau, however, being recognized.

7. The chief quarantine officer will make periodical or special inspections of the various ports and will have authority to visit any port at any time upon the request of the officer there stationed, quoting this paragraph as authority for traveling expenses incurred and making report to the Surgeon-General of each inspection.

8. Reports and correspondence from the stations will be forwarded to the Bureau through the chief quarantine officer. In forwarding propositions involving change of policy, new structures, or extensive repairs to old structures, nominations to original vacancies, promotions, and other unusual matters, the chief quarantine officer will add his recommendations in each case.

9. In exceptional cases when, in the opinion of the port quarantine officer, it is necessary to write or telegraph the Bureau direct, he may do so, but in each case will forward a copy of the communication to the chief quarantine officer.

10. The collector of customs at San Juan will act as disbursing officer for the quarantine service in Porto Rico. His account of disbursements will be forwarded monthly to the Marine-Hospital Bureau for administrative examination and transmission to the Auditor for the Treasury Department. He will pay bills incurred under the regulations or by Department authority, when certified to by the port quarantine officers and approved by the chief quarantine officer.

11. Each port quarantine officer shall transmit on the first of each month a report of expenses incurred during the preceding month and an estimate of the expenses to be incurred during the ensuing month. These reports and estimates shall be in duplicate, and one copy will be forwarded by the chief quarantine officer to the Bureau.

12. The chief quarantine officer shall exercise a surveillance over the operations of the several quarantine ports with regard to efficient quarantine, the expenditures, and general administration, and will promptly convey to the Bureau all pertinent information relative thereto, adding his recommendation when necessary. He will submit at the close of each fiscal year an annual report of the transactions and condition of each station.

WALTER WYMAN,
Supervising Surgeon-General U. S. Marine-Hospital Service.

Approved:
L. J. GAGE, *Secretary.*

REGARDING THE STATUS OF MIRAFLORES ISLAND, SAN JUAN HARBOR, UPON WHICH THE QUARANTINE STATION IS LOCATED.

Attention is invited to remarks upon this subject in the annual report of 1900. On October 4, 1900, a letter was addressed to the honorable the Secretary of War inviting attention to a letter from the Treasury Department of June 23, 1900, requesting that the Marine-Hospital Service be confirmed in its possession of Miraflores Island as a quarantine station at the port of San Juan, P. R., which island was transferred to the medical officer of the Marine-Hospital Service at that station September 5, 1899, by order of Brigadier-General Davis, then military governor of the island. No reply having been received to the above-named communication, a request was made for such information as the War Department could give upon the subject. In reply, the following letter was received:

WAR DEPARTMENT,
Washington, October 18, 1900.

SIR: I have the honor to acknowledge the receipt of your letter of the 4th instant, referring to your communication of June 23 last, and requesting such information as this Department may be able to give relative to the possession of Miraflores Island as a quarantine station at the port of San Juan, P. R.

In reply, I beg to advise you that the records of this Department show that on December 16 last your communication dated December 4, 1899, was referred to Brig. Gen. George W. Davis, commanding the Department of Porto Rico, for remark and return. On January 4 the same was returned by General Davis with his indorsement thereon, recommending that the question as to the occupancy of Miraflores Island as a quarantine station be deferred until location of naval station is determined.

Under date of July 5, 1900, the honorable the Secretary of the Navy stated that the needs of the service of his Department make it important to retain the naval station at San Juan, and that all the land south of the "Paseo de la Princessa" be placed under the Navy Department for such purpose, especially that part known as "Obras del Puerto," as it would give place for a floating dock without encroaching on present channel, and asked consideration of transfer to Navy Department of all War Department rights to this land.

This letter was referred to the commanding general, Department of Porto Rico, for an expression of his views and submission to the governor of Porto Rico.

The same was returned on August 6th last, by Brigadier-General Davis, with an indorsement by the chief of engineers, Department of Porto Rico, to the effect that as under the act of April 12, 1900, all harbor shores had been placed under the jurisdiction of the Civil Government, he assumed that the United States does not own, or, at least, can not use any wharf property in Porto Rico without the consent of its legislature, but suggested the transfer to the Navy Department of the land requested. A blue print showing what land belongs to the War Department was inclosed therewith.

General Davis in returning this letter approved of this transfer, and stated the temporary occupants had been notified to vacate, as they held under revocable leases from Spain, and as this property has not yet passed to the Porto Rican Government under section 13 of the act of April 12, 1900, it would seem that Congress could withdraw the land and harbor shores needed.

He also inclosed a letter from the acting governor of Porto Rico dated August 10, 1900, which said he was sure the governor approves the location of the naval station; that if legislation was needed it could be had next winter.

This correspondence was referred on August 27 by the Department to the honorable the Secretary of the Navy, with the information that this Department concurred in the preceding recommendations. No further action in the matter has yet been taken by the Department.

Very respectfully,

Elihu Root,
Secretary of War.

The Secretary of the Treasury.

A board of officers was appointed by the War Department for the purpose of inspecting the Government land in and about the city of San Juan, P. R., and on December 24, 1900, a request was made of the honorable the Secretary of War to furnish the Treasury Department with a copy of that portion of the report of said board which dealt with the subject of Miraflores Island, it being stated that it was the intention to request Congress to confirm the Marine-Hospital Service in the possession of Miraflores Island for quarantine purposes. In response to this request, the following letter was received:

War Department,
Washington, January 24, 1901.

Sir: I have your letter of the 24th ultimo and have the honor to transmit herewith a copy of so much of the report of a board of officers appointed to inspect public lands in and about the city of San Juan, P. R., as relates to the request for the permanent transfer to the Marine-Hospital Service of Miraflores Island.

The consideration of the above-mentioned report, which treats of various other subjects than that referred to by you, has been held awaiting the arrival of certain maps which have just been received.

However, I beg to advise you that the recommendation of the board as to the transfer of Miraflores Island to your Department for the use of the Marine-Hospital Service meets with my approval.

Very respectfully,

Elihu Root,
Secretary of War.

The Secretary of the Treasury.

[Inclosure.]

Extracts from the report dated San Juan, P. R., December 15, 1900, of the board of officers appointed by Special Orders, No. 271, Adjutant-General's Office, Washington, November 17, 1900.

* * * * * * *

Second. That the board also makes the following recommendations, which, though not literally covered by the duties assigned in the order, appear pertinent thereto, and the consideration of which at this time will greatly aid the settlement of all public-land questions now pending in the island.

* * * * * * *

(*c*) That the island of Miraflores, lying in the inner harbor of San Juan, including the buildings thereon, be transferred to the Treasury Department as a site for a marine hospital, if desired by that Department.

* * * * * * *

The recommendation relative to Miraflores Island was made in furtherance of a desire which has been expressed by the Treasury Department to occupy that island as a marine-hospital station.

REPORT FROM SAN JUAN AND SUBPORTS.

REPORT OF TRANSACTIONS AT THE PORT OF SAN JUAN, P. R., AND AT THE SUBPORTS OF THE ISLAND DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORTS FROM SAME STATIONS FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By P. A. Surg. H. S. MATHEWSON.

MARINE-HOSPITAL SERVICE,
San Juan, P. R., August 7, 1901.

SIR: Referring to Bureau letter of July 18, 1901, directing me to forward a report of transactions of the Service at this port covering the period from September 16, 1900, to June 30, 1901, together with a summary of the transactions at the subports of the island for the same period, I have the honor to submit herewith the following:

Reservation, San Juan.—The island of Miraflores, on which the quarantine station proper is located, is situated some 2½ miles from the city of San Juan and forms a portion of the southeast shore line of the bay. It is about 24 acres in area and covered for the greater part by a dense growth of shrubs and underbrush. The island is artificially formed, being separated from the mainland by a cut known as "Miraflores Cut," about 20 yards in width. This cut has only some 12 inches of water at low tide. Southeast of the cut, and extending to the mainland, is a salt marsh 800 feet or more in width.

On the island are situated a one-story brick building 150 feet long by 30 feet wide, now equipped for the detention of suspects and in which also the station attendants are quartered and the drug and general storeroom located; a one-story, three-room brick building, with kitchen attached, at present in use as quarters for the acting assistant surgeon at this port. Adjacent to this building is a small frame building in use as servants' quarters. A one-story brick building containing one room 14 by 15 feet, to be used in case of emergency as a lazaretto; a frame building divided into two rooms, in one of which the old steam disinfecting cylinder formerly used at the Spanish quarantine of the port is located, and in the other a zinc-lined room 9 by 15 feet, for the disinfection of baggage by formaldehyde. Under a shed extending out from this building the station boiler and pump which supplies necessary water to the station are located, and four small bathrooms are also attached to this building. A small frame building for the storing of tools, paints, and miscellaneous articles, and a shed under which the laundry work is done, comprises all buildings on the station.

The structure above referred to as a detention building offers for this purpose four large rooms 23 by 22 feet. These rooms are provided with beds, cots, and three section bunks, together with other necessary furniture, for the accommodation at present of 55 persons. About 100 persons could be comfortably cared for by the use of tents and the addition of more cots in the rooms and hallways. The station is provided with tents and cots necessary for this purpose.

The building above mentioned, to be put in use as a lazaretto in case of emergency, is situated some 200 yards from the detention building. It is much too small for this purpose, but hospital tents, of which the station has six large ones, could be used also for this purpose.

In addition to the steam cylinder and room for formaldehyde disinfection, two autoclaves, and two formaldehyde generators located on the island, the Service here is provided with a barge on which all necessary apparatus is installed, including boiler, sulphur furnace and fan, two 60-inch steam chambers, with formaldehyde attachments, sulphur and bichloride hose, pumps, tanks, etc., for the proper and complete disinfection of vessels. This barge is anchored close to the island.

Out quarantine.—All vessels are boarded and inspected in "out quarantine" grounds. By reason of the harbor of San Juan being small and the channel narrow, this anchorage is situated only about 1 mile from the main water front of the city. Vessels from ports that are suspicious are required to anchor here, and the crews and passengers mustered and inspected. The cargo and baggage are also inspected, and all baggage and mail for Porto Rico, unless bearing the certificate of disinfection of an officer of the Service at the port from which it was taken on, are removed to the island and disinfected by steam or formaldehyde, as the case may require. All passengers for Porto Rico, who can not produce satisfactory evidence of immunity to yellow fever, are taken to the island and held in quarantine the necessary observation period. Passengers for Porto Rico who can not exhibit recent vaccination marks, or produce evidence of recent "takes" following vaccination, are vaccinated. If there is no sickness on board of such vessels they are permitted to take passengers and water and land freight in quarantine, under guard. Freight thus discharged is lightered ashore, and it is required of the guard to see that no direct communication is held with the city by any passengers remaining on board or the crew. Vessels arriving from ports known to be free from quarantinable diseases are, after inspection, permitted to dock.

The class of vessels which enter this port from suspicious ports generally touch here to land a few passengers and mail, take water and passengers, and sail, usually, within twenty-four hours. The exception to this is the Herrera Line of steamers, plying between Cuba, Dominican ports, and Porto Rico. Two vessels of this line arrive at San Juan each month. They are invariably disinfected by officers of the Service at Santiago de Cuba prior to sailing for Porto Rico via Porto Plata.

In quarantine.—Vessels arriving here with sickness on board, or evidence of having recently had illness of a quarantinable nature on board would be, unless they declined disinfection and sailed immediately, taken to "in quarantine" anchorage—about 1 mile up the bay from the "out quarantine" anchorage and 2 miles from the city—the barge placed alongside, and the vessels disinfected as prescribed by regulation. The passengers on such a vessel would be removed to the island, given a bath and change of clothing, and placed in quarters in the detention building. Any sick would of course be at once removed to the lazaretto and strict isolation maintained. Personal clothing of such passengers would be immediately disinfected, and any baggage and mail as soon thereafter as possible. A medical officer, hospital steward, and all attendants on the island would be placed in quarantine, and all direct communication with the city discontinued until the vessel and passengers had been released. No vessel requiring disinfection has arrived in Porto Rico during the period covered in this report.

Subports.—There are six subports reporting to this office, namely: Mayaguez, Arecibo, Humacao, Fajardo, Arroyo, and Aguadilla. An acting assistant surgeon of the Service is stationed at each, and makes regular weekly and monthly reports to this office.

Statistics.—The following is a summary of the transactions of this and the six subports during the period embraced by this report:

San Juan:	
Vessels inspected	204
Bills of health issued	266
Crew inspected	14,464
Local passengers inspected	2,114
Passengers in transit inspected	7,062
Vessels held in quarantine	15
Pieces of baggage disinfected	180
Sacks of mail disinfected	10
Persons vaccinated	106
Passengers detained at quarantine station	20
Subports:	
Vessels inspected	226
Bills of health issued	249
Crew inspected	7,880
Passengers inspected (in total)	2,357
Vessels held in quarantine	13
Pieces of baggage disinfected	81
Persons vaccinated	9

Porto Rico being free from yellow fever for several years past, no inspection of outgoing baggage is necessary. And for a similar reason few applications are had for certificates of immunity to yellow fever. Certificates of protection against smallpox or of recent vaccination, when such vaccination is performed by medical officers on duty at this port, are issued here.

City office.—At the city office, at present located at No. 3 San Justo street, convenient to the water front, most of the clerical work of the station is done, including the issuing of bills of health, certificates, etc. This office is also used as the marine hospital office for this port, and the out relief dispensary is there located.

During the period covered by this report no case of yellow fever has occurred in Porto Rico. The last authenticated case was reported in 1898, prior to the occupation of the island by the United States. Four cases of supposed yellow fever have been reported in various parts of the island during the past nine months, but upon investigation the diagnoses have been found to be in error. A careful record of the name and destination of all persons arriving at the various ports of Porto Rico is kept by the quarantine officer of each port in order to be able to determine, in the event of the occurrence of a case of yellow fever, whether it is an importation or a recrudescence.

In regard to plague and cholera no especial precautions have been necessary here, as no vessels have arrived at any port of the island from localities infected with either of these diseases.

During the time covered by this report smallpox appeared upon the island, being without doubt a recrudescence arising from old foci of infection. The disease first appeared in Ponce during the week ended February 8, 1901, 4 cases being reported in that week. Between that date and July 1, 1901, 216 cases, including 1 death, have been reported from twelve localities scattered all over the island and including Ponce and San Juan. The epidemic has been of a very mild type and has been admirably managed and controlled by the superior board of health of the island.

In the past few months a partial investigation of the mosquitoes infesting the quarantine station at this port has been made. The Culex pungens and the Stegomyia are found in abundance, but as yet no specimens of the Anopheles have been met with. It is to be noted that the Stegomyia, the mosquito charged at present with carrying the contagion of yellow fever, is abundant in this locality.

All efforts are being made on the part of the Service to render the quarantine station free from these pests, but at present the results are not very encouraging.

Respectfully,

H. S. Mathewson
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for Porto Rico.

The Surgeon-General U. S. Marine-Hospital Service.

Supplemental report.

Marine-Hospital Service,
San Juan, P. R., September 16, 1901.

Sir: Referring to Bureau letter dated July 18, 1901, directing me to transmit, on the 15th of the present month, a supplemental report of the quarantine transactions of this and the six subports of the island of Porto Rico, covering the period from July 1, 1901, to September 15, 1901, inclusive, I have the honor to submit herewith the following transactions at San Juan:

Vessels inspected	37
Bills of health issued	64
Crew inspected	2,361
Local passengers inspected	471
Passengers in transit inspected	1,482
Vessels held in quarantine	6
Pieces of baggage disinfected	151
Sacks of mail disinfected	7
Persons vaccinated	24
Passengers detained at quarantine station	33

No changes have been made or new measures instituted in the quarantine restrictions enforced in the island of Porto Rico, as outlined in a previous report from this office under date of August 7, 1901, as none have been deemed necessary.

As previously reported, the French steamship *Saint Simon* arrived at this port on July 16, 1901, with one case of illness, presenting all the typical symptoms of yellow fever. The case in question was in the person of a nonimmune passenger who embarked on the vessel at Port au Prince, and the subsequent symptoms of the patient and her death three days after the vessel sailed from this port, and on the sixth day of the patient's illness, would seem to confirm, beyond reasonable doubt, the diagnosis of yellow fever as made at the time the vessel was inspected when she entered this port.

The following is a résumé of the transactions of the subports during the period embraced by this report:

Vessels inspected	39
Bills of health issued	45
Crew inspected	1,231
Passengers inspected (in total)	717
Vessels held in quarantine	4
Pieces of baggage disinfected	130

Nothing of interest has been reported to this office from any of the subports during the period covered by this report.

The island is at present free from any quarantinable disease.

Respectfully,

H. S. Mathewson,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for Porto Rico.

The Surgeon-General U. S. Marine-Hospital Service.

REPORT FROM PONCE.

Report of Transactions at the Port of Ponce, P. R., during the Fiscal Year ended June 30, 1901; also Supplemental Report of Transactions from July 1 to September 15, 1901, inclusive.

By Asst. Surg. W. W. King.

Marine-Hospital Service,
Ponce, P. R., August 3, 1901.

Sir: In accordance with Bureau letter of July 18, 1901, I have the honor to submit the following report of the transactions at this station from September 15, 1900, to and including June 30, 1901:

Vessels inspected	164
Vessels in quarantine	21
Crew inspected	6,836
Passengers for Ponce inspected	915
Passengers in transit inspected	2,583
Passengers whose baggage was disinfected	1
Pieces of baggage disinfected	1
Bills of health issued	227

The work of the station was lessened somewhat after October 1, 1900, since which time vessels from the United States have not been subject to inspection except from Californian ports, and from New Orleans during the close quarantine season.

During the period covered by this report no vessel arrived with any quarantinable disease on board, and only one passenger whose baggage required disinfection. The passengers came chiefly from Europe, United States, Santo Domingo, and Cuba; the baggage from the latter when requiring disinfection being so treated at the port of departure, which accounts for so small amount of this work at this station. Passengers are inspected personally by comparison with the passenger lists and the thermometer used in all cases of the slightest doubt.

The station has no facilities whatever for detention of passengers or care of sick people. Fortunately all vessels that have brought nonimmunes requiring detention have been en route to San Juan, and the passengers were detained aboard, completing their five-day period at that station. This entails a hardship on Ponce passengers, who must make the extra expensive journey back to Ponce from San Juan.

The vessels held in quarantine have been chiefly Cuban steamers from Habana, via Cuban and Dominican ports, coming disinfected at Santiago, Cuba, and held only to prevent the landing of nonimmunes; and Spanish steamers from Habana, via Port Limon, Colon, Cartagena, Sabanilla, Puerto Cabello, and La Guayra, coming without disinfection and carrying a large number of dirty steerage passengers. These vessels are held to prevent any other than necessary communication with the shore. Passengers for Ponce are allowed to land with disinfection of their baggage if deemed advisable. Few people come by these vessels.

The station equipment consists of a disinfecting room 20 by 15 by 10, two autoclaves, two Kuhn formaldehyde generators, and a supply of sulphur, formalin, bichloride, etc. A 25-foot whaleboat was received February 18, 1901. Boarding is done jointly with the customs officer, the customs service furnishing two of the five men in the boat's crew.

Bills of health are issued from this office to all vessels applying for them, as many vessels not bound for United States ports desire to carry the United States bill of health.

Regular weekly reports of the sanitary and health conditions of Ponce and surrounding district have been made to the Bureau.

No friction in any respect has occurred in carrying on the work of the station.

Respectfully,

W. W. King,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

Supplemental report.

Marine-Hospital Service,
Ponce, P. R., September 17, 1901.

Sir: I have the honor to transmit the following supplemental report of the transactions of this station for the period July 1 to September 15, 1901:

Vessels inspected	27
Vessels in quarantine	4
Crew inspected	1,332
Passengers for Ponce inspected	250
Passengers in transit inspected	624
Pieces of baggage disinfected	117
Pieces of baggage inspected and passed	314
Sacks of mail disinfected	5
Bills of health issued	45

Since July 1 baggage and mail from Haiti and Dominican Republic have been disinfected on entrance at this port. There is considerable travel between Porto Rico and the latter especially; two steamers a month arrive on the 17th and 18th, respectively. Coming so close together taxes the capacity of the disinfecting equipment. The disinfection is done by formaldehyde generated by the Kuhn generator or autoclaves.

The regular work of the station has run smoothly, no change of any importance having been made in the methods followed.

Respectfully,

W. W. King,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

Mexico.

CHANGES IN ASSIGNMENTS OF OFFICERS.

On March 1, 1901, Acting Asst. Surg. D. E. Dudley was transferred from Habana, Cuba, to the office of the United States consul at Vera Cruz, Mexico, for the inspection of vessels leaving for the United States, relieving Acting Asst. Surg. S. H. Hodgson, who was transferred to Progreso, Mexico, for like service.

On April 19, 1901, Acting Asst. Surg. V. B. Gregory was assigned to duty in the office of the United States consul at Tampico, Mexico. Following are the instructions sent to one of these officers, they being applicable to each port.

INSTRUCTIONS TO OFFICER AT VERA CRUZ.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, March 21, 1901.

SIR: Referring to Bureau letter of March 1, 1901, approved by the Honorable, the Secretary of the Treasury, and by the President, assigning you to duty in the office of the United States consul at Vera Cruz, Mexico, I have to inform you that your duties under this order will comprise the inspection of all vessels leaving Vera Cruz for any port in the United States or its dependencies, together with the inspection of all passengers, their baggage, and of such cargo as is liable to convey infection, as provided for in the United States Quarantine Regulations to be observed at foreign ports.

All baggage which is considered by you to be dangerous must be disinfected in accordance with the United States Quarantine Regulations. The principles governing the action of an officer detailed to a foreign port are that the owners or master of a vessel must comply with the regulations which have been provided in order to obtain the bill of health, without which a vessel can not enter a port of the United States except by subjecting herself to a fine. It sometimes happens, and may happen at your port, that it is more convenient for you to undertake the supervision of the disinfection in order that you can properly certify to the bill of health, but the material and appliances are properly a charge against the vessel, although in some instances appliances have been furnished by the Bureau. You will sign the bills of health in conjunction with the United States consul at Vera Cruz and issue same to the vessels inspected by you.

There is forwarded to you, under separate cover, a supply of blank form No. 1931, upon which you will transmit to the Bureau a weekly abstract of bills of health issued. You will also transmit a letter to the Bureau, at least once a week, giving in detail the transactions at your station, and incorporate therein anything else which may be of interest concerning public health.

Your duties should be carried out in a spirit of friendly cooperation with the consul, with a view to insuring the greatest degree of safety with the least interference with commerce. The State Department will be requested to notify the United States consul of your detail in his office.

Should matters arise which are not covered by the United States Quarantine Regulations you will be guided by the experience gained at the port of Habana, Cuba.

Please acknowledge receipt of this letter.

Respectfully,
WALTER WYMAN,
Surgeon-General Marine-Hospital Service.

Acting Asst. Surg. D. E. DUDLEY, M. H. S.,
United States Consulate, Vera Cruz, Mexico.

REPORT FROM VERA CRUZ.

REPORT OF TRANSACTIONS AT THE PORT OF VERA CRUZ, MEXICO, DURING THE FISCAL YEAR ENDED JUNE 30, 1901.

By Acting Asst. Surg. D. E. DUDLEY.

MARINE-HOSPITAL SERVICE,
Vera Cruz, Mexico, September 28, 1901.

SIR: I have the honor to submit the following report of the transactions of the Service at this port during the last three months of the fiscal year ending June 30, 1901.

The transfer of Acting Assistant Surgeon Hodgson in February to Progreso left the station without a medical officer until March 24. This short interim was sufficient for a general relaxation of the regulations, so that a reorganization of the work was necessary to place the Service upon its former footing.

The inspection of passengers bound for the United States, Cuba, and Porto Rico was reestablished.

Considerable prejudice existed with regard to the work of the Service here, and it was claimed that passenger and freight traffic suffered great damage during the quarantine months. I therefore made it one of my first duties to see the various merchants and representatives of transportation companies and explain our quarantine regulations. I assured them that it was the purpose of the Marine-Hospital Service to interfere with commerce as little as possible, and explained that our sanitary regulations, when faithfully observed, would aid rather than obstruct commerce, and that with their cooperation everything possible would be done to expedite the business of their vessels. They promised cooperation and most of them have given it.

The opinion also prevailed among the agents of the steamship lines here that vessels bound from Vera Cruz to New Orleans were prohibited taking passengers by the quarantine regulations, and that an additional number of days' detention in quarantine would be imposed upon such vessels as a penalty. This impression was corrected, and they were informed that all vessels bound from Vera Cruz to New Orleans, with or without passengers, were subject during the summer months to disinfection and the usual quarantine detention.

During the summer of 1900 passenger baggage from Vera Cruz for Habana or New York was taken off at Habana and disinfected, imposing a great deal of work upon the Habana station and causing much trouble and annoyance to passengers.

The Mexican authorities who had disinfected the baggage in the first place were indignant and felt that discredit was thrown upon their work.

In order to avoid these annoyances arrangements were made with the Bureau's approval, by which the sanitary department of Vera Cruz would continue to disinfect New York and Habana baggage, after which each piece would be marked and certified to by our labels.

This scheme was never put into execution. Baggage was sent to the disinfection station, but there was always some difficulty presented. Either the man in charge had not received orders or preparations had not been made to handle baggage on that day.

Outside influences were no doubt responsible for this failure.

Vessels bound for the United States or Cuba are inspected a few hours before sailing. The observations made at these inspections are then entered upon the bill of health, which is signed and delivered to the master of the vessel.

During the period mentioned in this report 84 vessels bound for the United States and Cuba were cleared and given bills of health; 626 passengers bound for New York and Habana were inspected and given certificates of health; 1,815 passengers were inspected on board ship; 28 persons were vaccinated; 4 persons were refused certificates, as they were recovering from measles and were still desquamating.

The accompanying table of statistics gives the mortality of the city of Vera Cruz during the fiscal year ending June 30, 1901.

The figures given opposite "enteritis" include the deaths from other intestinal diseases, entero-colitis, and gastro-enteritis.

Respectfully,

D. E. DUDLEY,
Acting Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

[Inclosure.]

Mortality report of the city of Vera Cruz, Mexico, fiscal year ending June 30, 1901.

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Yellow fever	27	44	50	34	17	10	1	1	.....	2	.....	4	190
Pernicious malaria	8	11	14	15	7	14	8	5	7	7	3	9	108
Remittent fever	6	10	5	15	12	5	3	8	3	7	3	5	82
Tuberculosis	16	26	26	23	33	34	30	25	49	32	28	27	349
Tetanus	3	2	6	4	4	5	3	5	4	4	6	6	52
Smallpox	24	22	15	3	2	1	3	.....	.....	.....	1	1	72
Meningitis	6	5	2	3	3	2	3	4	4	2	10	4	48
Enteritis	24	30	14	22	15	13	28	24	19	10	22	17	238
Dysentery	4	2	6	9	6	8	10	5	.....	2	3	3	58
Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	2	1	.....	.....	3
Deaths from all causes	167	209	193	198	149	142	151	130	159	139	132	138	1,907

REPORT FROM PROGRESO.

REPORT OF TRANSACTIONS AT THE PORT OF PROGRESO, MEXICO, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. S. H. HODGSON.

MARINE-HOSPITAL SERVICE,
Progreso, Mexico, August 1, 1901.

SIR: In reply to Bureau letter of July 18, from foreign quarantine division, I have the honor to make the following report of transactions at this port from March 23 to and including June 30.

To preface the report, it is well to describe Progreso and its surroundings, and the application of quarantine regulations here by the local authorities.

Progreso, the seaport of Merida, is a village of about 4,000 inhabitants, built on a sand beach fronting the Gulf of Mexico, and surrounded by a mangrove swamp. The town is without any sewerage or drainage system, waterworks, or garbage department. The jail and custom-house are the only two public buildings, there being no hospital or place for caring for the sick.

Two railroad lines connect Progreso with Merida, and daily uninterrupted traffic is kept up between the two places, notwithstanding that smallpox has been epidemic in Merida for the past year, and yellow fever has become epidemic there during the past month.

Merida is a town of 60,000 inhabitants, and is absolutely free from any symptoms of sanitation. The streets, according to the weather, are either liquid mud or dust. Smallpox and yellow fever are considered as a matter of course, and are treated accordingly.

In Progreso there are two wharves where shallow draft vessels unload and take on cargo, but the deep-draft vessels anchor about 3 miles offshore and lighter their cargoes.

The local quarantine officers here inspect the incoming vessels, and disinfect baggage from infected ports, but put no restriction on outgoing travel.

This station is not provided with any disinfecting apparatus or boat for boarding purposes. The boarding is done in hired boats or the steam tug furnished by the steamship agent.

There is no passenger traffic between this port and any United States ports except Habana and New York. The baggage for Habana is put by itself in the ship and is disinfected in Habana. I do not know what is done to Progreso baggage in New York.

All passengers for United States ports secure at this office a health certificate before embarking. Those who can not show a good vaccination mark or signs of having had smallpox are vaccinated before being granted a certificate. So far, it has been necessary to vaccinate only eight applicants. The white certificates, yellow-fever immune, is issued to those who can produce satisfactory evidence of having had the disease or who have lived in yellow fever localities for ten years or more.

To and including June 30, 555 passengers were examined and issued health certificates. Three hundred and thirty-three were for Habana and 222 were for New York.

Seventy-seven vessels were inspected and issued bills of health.

Respectfully, yours,

S. H. HODGSON,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Progreso, Mexico, September 17, 1901.

SIR: I have the honor to forward this supplemental report of the transactions at this station for the period between June 30 and September 15.

Fifty vessels were inspected, 17 having been issued original bills of health and 33 issued supplementals.

Three hundred and seven passengers were examined and issued health certificates.

Several cases of malarial fevers and other diseases were treated aboard of the vessels, but there have been no cases of quarantinable diseases found among any of the vessels inspected.

There was one case of yellow fever reported on the steamship *Mathilde* and the patient removed to the hospital in Merida, but the subsequent course of the disease did not substantiate the diagnosis.

There have been but four cases in this port during the period, and no deaths, but the epidemic of yellow fever in Merida renders the inspection of passengers and crews of vessels necessary, on account of the proximity of that city and the absence of any restriction of travel.

Nothing worthy of report has happened out of the regular routine of the office.

Respectfully, yours,

S. H. HODGSON,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

REPORT FROM TAMPICO.

REPORT OF TRANSACTIONS AT THE PORT OF TAMPICO, MEXICO, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. V. B. GREGORY.

TAMPICO, MEXICO, *August 6, 1901.*

SIR: I have the honor to make the following report of the transactions at this port from the time of my arrival, May 20, 1901, to and including June 30, 1901:

During this time there were inspected 31 ships, 43 passengers, and 48 pieces of baggage.

Number of deaths from all causes, 59.

The wharves are located about 2½ miles from Tampico proper and are reached by railroad.

All passengers and crews are inspected, and when deemed necessary their temperatures are taken.

Very respectfully,

V. B. GREGORY,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

TAMPICO, MEXICO, *September 22, 1901.*

SIR: I have the honor to submit the following supplemental report of the transactions at this port from July 1, 1901, to and including September 15, 1901:

Population	18,000
Deaths from all causes	161
Deaths from yellow fever	2
Number of vessels inspected	56
Number of pieces of baggage inspected	20
Vessels disinfected	1

The steamers of the American Smelting Company are disinfected at this port, said company furnishing each of its vessels with sulphur pots and sulphur for disinfecting the ships holds, and the Bureau furnishing 2 formaldehyde lamps and 1 barrel of wood alcohol for the disinfection of the living apartments. Each vessel disinfected is furnished with a certificate signed by me, showing the number of hours spent in disinfecting the vessel.

This has been an exceptionally dry and healthy season.

The ships' agents provide means for boarding vessels. The Mexican authorities at at this port, and also the Mexican Central Railway officials here, have shown me every courtesy and aided me in every way possible in the discharge of my official duties. Especially is this true of Dr. A. Mateinza, the federal health officer for this port.

Respectfully, V. B. GREGORY,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

CENTRAL AND SOUTH AMERICA FRUIT PORT INSPECTION SERVICE.

FINAL REPORTS—SEASON OF 1900.

The inspection at these ports was discontinued October 31, with the exception of Bocas del Toro, Colombia, and Port Limon, Costa Rica, at which ports the officers continued in service until November 30, 1900. The following are the reports of transactions from September 15, 1900, until the close of the work at each station:

LA CEIBA.

REPORT OF TRANSACTIONS AT PORT OF LA CEIBA, HONDURAS, FROM SEPTEMBER 16 TO OCTOBER 31, 1900, INCLUSIVE.

LA CEIBA, HONDURAS, *November 1, 1900.*

SIR: I have the honor to make the following report for the period from September 16, 1900, to and including October 31, 1900, for this station: Twenty-two vessels were inspected, 7 passengers; 12 pieces of baggage were disinfected; crews inspected numbered 323; total number of persons inspected, 330.

Respectfully, SPENCER FRANKLIN,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

BELIZE.

REPORT OF TRANSACTIONS AT PORT OF BELIZE, BRITISH HONDURAS, FROM SEPTEMBER 16 TO OCTOBER 31, 1900.

BELIZE, BRITISH HONDURAS, *November 1, 1900.*

SIR: During this period 6 steamers cleared for New Orleans direct and 1 for New Orleans via Vera Cruz, Mexico. Two steamers during this time cleared for Mobile. Mobile continued the passenger restriction, so that there were none for that port during this period. New Orleans relaxed on October 16, but compelled a second fumigation of all baggage at the Mississippi River Quarantine Station. Previously, however, by special permit of the State board of health, Dr. Knight, who had represented this board, and his wife, had gone to New Orleans by the steamer of September 21; 6 pieces of baggage were fumigated for them. On October 26 (after restriction was removed on 15th) I sent two passengers to New Orleans with 6 pieces fumigated. Between October 16 and 31 I sent south on these steamers 7 passengers with 4 pieces. This made a total of 4 passengers, north, with 12 pieces; and 7 passengers, south, with 4 pieces.

On September 22 an English steamer, *Sibern*, cleared for Norfolk; no passengers. On October 6 the *Taba*, also an English steamer, cleared for Norfolk; she carried 6 passengers for the United States, with 14 pieces fumigated. On October 16 the *Capella*, Harrison Line, cleared for New Orleans via Vera Cruz; no passengers.

No infection was discovered at any time during the season on any vessel in port. The city and colony have also been singularly exempt from infection. My service in Belize has been a very pleasant and satisfactory one. As the representative of the United States Marine-Hospital Service I have been the recipient of many courtesies at the hands of the people.

Respectfully, N. K. VANCE,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

BOCAS DEL TORO.

REPORT OF TRANSACTIONS AT PORT OF BOCAS DEL TORO, COLOMBIA, FROM SEPTEMBER 16 TO NOVEMBER 19, 1900.

BOCAS DEL TORO, COLOMBIA, *November 20, 1900.*

SIR: I have the honor to transmit herewith report of transactions at this station from September 16, 1900, to and including November 19, 1900.

The number of vessels inspected clearing for ports in the United States during this period of time is as follows: Cleared for New York via Port Limon, Costa Rica, 1; cleared for Baltimore, Md., 5; cleared for New Orleans, La., 4; cleared for Mobile, Ala., 21; total, 31. Number of passengers inspected, bound to New Orleans, La., 1; Mobile, Ala., 5; total 6. Number of pieces of baggage disinfected, 11.

There have been 10 cases of yellow fever in the town of Bocas del Toro from July 15, 1900, to November 19, 1900, of which 3 died, 5 recovered, and 2 yet remain under treatment.

All the premises lately infected with yellow fever except 4 have been disinfected, 3 of which I am assured will be disinfected in a few days, the present occupants of one dwelling positively objecting to any preventive or hygienic measures. It is extremely difficult to secure any reliable or official information relative to the existence of prevailing diseases or the cause of death in this community.

Certificates as to the cause of death are not required by the authorities, and there is no official record open to inspection. I would respectfully suggest that during the quarantine season the laboring fruit crews be required to wear uniform clothing of washable material, so as to detect and prevent any indiscriminate communication between ship and shore, and for the more thorough and satisfactory disinfection. During this quarantine season these laborers have worn any and all kinds of clothing which has been through the disinfecting chamber. This wearing apparel lacking uniformity, it is impossible to prevent these laborers from wearing any clothing that may not have been disinfected.

I have also to state that the formaldhyde generator, United States Marine-Hospital property, in use here is in fairly good working order, but will require an entirely new jacket.

I have one other suggestion as a preventive measure against the carrying of infection to fruit vessels, namely, the necessity of placing a guard upon the ship while in the fruit ports, who should be under the sole supervision and control of the medical officer.

There can be but little doubt that there is surreptitious communication between ship and shore that can not otherwise be prevented.

Respectfully,

WM. H. CARSON,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

PORT LIMON.

REPORT OF TRANSACTIONS AT PORT LIMON, COSTA RICA, FROM SEPTEMBER 16 TO NOVEMBER 15, 1900.

PORT LIMON, COSTA RICA, *November 18, 1900.*

SIR: As per your instructions, I forward you the transactions at this station from September 16 to November 15, inclusive.

As per inclosure, you will see that I have inspected and issued certificates to 33 vessels, issued certificates to 29 passengers, and disinfected 37 pieces of baggage.

I have also issued certificates to 48 passengers leaving Port Limon on steamship *Sunrise* for Bocas del Toro, Colon, and Bluefields, and have disinfected 96 pieces of baggage going on said steamer.

As per agreement with the Costa Rican Government, I have disinfected 722 pieces of baggage arriving from Jamaica and South American ports.

There have been 29 deaths during the period, as follows: September 16, a child, 1 year and 7 months of age, from dentition; a child, 7 months of age, from pneumonia; September 17, an adult, 50 years of age, carcinoma of rectum; September 18, a child, 6 years of age, from remittent fever; a child, 4 months of age, from intermittent fever; a child, 18 months, from diarrhea; September 24, an infant, 1 month and 8 days, from remittent fever; September 27, an adult, 24 years of age, from remittent fever; October 1, an adult, 27 years of age, from tetanus; October 2, an adult, 49 years of age, from Bright's disease; a child, 2 years of age, from malaria; October 4, an adult, 25 years of age, from ulcer of intestines; a child, 4 months of age, from malaria; October 9, a child, 11 years of age, from inanition; October 11, a child, 8 years of age, from pneumonia; October 13, an adult, 35 years of age, from pernicious fever; an adult, 35 years of age, from tetanus; October 15, an adult, 20 years of age, from remittent fever; an adult, 30 years of age, from pernicious fever; October 16, an adult, 21 years of age, from violence (murder); October 19, an adult, 29 years of age, from heart disease; October 20, an adult, 19 years of age, from pneumonia; an adult, 32 years of age, from dysentery; October 31, an adult, 39 years of age, from peritonitis; November 1, an adult, 28 years of age, from cerebral congestion; November 5, an adult, 40 years of age, from pneumonia; November 9, an adult, 40 years of age, from paralysis; November 11, a child, 14 years of age, from pericarditis; November 12, an adult, 30 years of age, from fracture of skull. During the period there has been imported 1 case of yellow fever in the person of the captain of the *Adler*, which arrived here from Bocas del Toro, Colombia, October 25.

During the same period we have had 1 case of yellow fever in Limon, which occurred October 31. Whether this case originated in Limon or not I am unable to say. This patient is a banana receiver, whose duty is to go up and down the railroad to the interior and class bananas as they are loaded on the train. He is exposed to all conditions of weather day and night, and it is possible he may have contracted this disease somewhere on the railroad line, though I know of no yellow fever in the interior. All lots in Limon are about filled up to the grade. This work will be completed in a very few days.

Respectfully,

J. GREY THOMAS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

[Inclosure.]

Date.	Vessel.	Master.	Number of crew.	Destination.	Number of passengers.	Number pieces baggage disinfected.
Sept. 20	Steamship Beverly	Israel	36	New Orleans	0	0
Sept. 22	Steamship Holstein	Voss	21	do	0	0
Sept. 23	Steamship Hispania	Froekberg	21	do	0	0
Sept. 27	Steamship Olympia	Seiders	40	Mobile	0	0
Sept. 29	Steamship Kitty	Montansen	18	do	0	0
Oct. 1	Steamship Alene	Long	38	New York		
Oct. 3	Steamship Adler	Reid	24	Mobile	0	0
Oct. 4	Steamship Clematis	Bulman	29	New Orleans	0	0
Oct. 5	Steamship Beverly	Israel	35	Mobile	0	0
Oct. 7	Steamship Holstein	Voss	20	do	0	0
Oct. 8	Steamship Athas	Lund	38	New York		
Oct. 10	Steamship Olympia	Seiders	38	Mobile	0	0
Oct. 12	Steamship Banes	Kaland	15	do	0	0
Oct. 15	Steamship Alleghany	Lowe	40	New York		
Oct. 16	Steamship Kitty	Mortansen	18	New Orleans	0	0
Oct. 17	Steamship Schleswig	Schluter	23	Cienfuegos	23	37
Oct. 18	Steamship Beverly	Israel	37	Mobile	0	0
Oct. 19	Steamship Hispania	Froekberg	21	do	0	0
Oct. 20	Steamship Anselm	Brown	35	do	0	0
Oct. 22	Steamship Altai	Morris	40	New York		
Oct. 25	Steamship Olympia	Seiders	39	Mobile	0	0
Oct. 28	Steamship Alabama	Severtson	17	New Orleans	0	0
Oct. 29	Steamship Alene	Long	38	New York	0	0
Oct. 31	Steamship Beverly	Israel	37	New Orleans	0	0
Nov. 2	Steamship Hispania	Froekberg	21	do	0	0
Nov. 3	Steamship Kitty	Mortansen	19	Mobile	0	0
Nov. 5	Steamship Athas	Lund	38	New York		
Nov. 8	Steamship Anselm	Brown	37	New Orleans	0	0
Nov. 10	Steamship Alabama	Severtson	17	do	0	0
Nov. 11	Steamship Olympia	Seiders	38	Mobile	0	0
Nov. 12	Steamship Alleghany	Lowe	40	New York		
Nov. 14	Steamship Beverly	Israel	38	New Orleans	6	
Nov. 15	Steamship Adler	Waite	25	New York	0	0
	Total				29	37

LIVINGSTON.

REPORT OF TRANSACTIONS AT LIVINGSTON, GUATEMALA, FROM SEPTEMBER 6 TO OCTOBER 31, 1900.

LIVINGSTON, GUATEMALA, *October 31, 1900.*

SIR: I have the honor to complete the yearly report of the quarantine work done at Livingston by hereby submitting a report covering the term extending from September 6 to October 31, inclusive. The first report extended from April 1 to July 1; the second to September 15; therefore, this final one completes the season: Number of vessels inspected, 3; no baggage disinfected or inspected during this time; number of vessels disinfected, none; number of passengers inspected, none; number of passengers disinfected, none. The taking off of the New Orleans boats and the passenger quarantine makes this report so meager. The masters of vessels and the company agents have always willingly cooperated with me.

Respectfully,

SAMUEL HARRIS BACKUS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

BLUEFIELDS.

REPORT OF TRANSACTIONS AT PORT OF BLUEFIELDS, NICARAGUA, FOR MONTH OF OCTOBER, 1900.

BLUEFIELDS, NICARAGUA, *November 1, 1900.*

SIR: I have the honor to make the following report of the transactions at this port for the month of October:

Seven steamships have been inspected and cleared, carrying 37 passengers. Sixty-three pieces of baggage have been disinfected, besides the extra clothing of the gangs of laborers who regularly unload and load the fruit vessels.

Eight deaths have been reported for the month, which gives a mortality rate of 24 per 1,000 per annum for the town of Bluefields. The general sanitary condition of the port and adjacent territory has been very satisfactory.

Respectfully,

D. W. GOODMAN,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

PUERTO CORTEZ.

REPORT OF TRANSACTIONS AT PUERTO CORTEZ, HONDURAS, FROM SEPTEMBER 16 TO OCTOBER 31, 1900.

PUERTO CORTEZ, HONDURAS, *October 31, 1900.*

SIR: In accordance with instructions contained in Bureau letter of October 2, 1900 (E. B. S.), I have the honor to submit a supplementary report of the transactions of the Service at Puerto Cortez, Honduras, for the period from September 16 to October 31, 1900.

From September 16 to 30, 8 vessels were inspected and cleared, 156 members of crews inspected, and 5 passengers who went by the way of Habana, Cuba.

In October, 14 vessels were inspected and cleared, 290 crew inspected, 44 passengers given certificates, 49 pieces of baggage disinfected, making a total of 22 vessels and 446 members of crews inspected, 49 passengers given certificates, and 49 pieces of baggage disinfected. Of the 22 vessels cleared, 12 were for New Orleans, 7 for Mobile, 1 for New York, and 2 for Habana, Cuba. During the quarantine season of 1900 (from May 6 to October 31) there cleared from Puerto Cortez for ports in the United States a total of 99 vessels, with 1,854 members of crews, 279 passengers, 389 pieces of baggage.

The health and sanitary condition of the port remained good during the entire season, no cases of a suspicious nature having developed, and very few cases of the severer forms of malarial fever came under my observation, malarial fever of a mild form and bronchitis being the most common ailments.

Respectfully,

R. H. PETERS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

SEASON OF 1901—REESTABLISHMENT OF FRUIT PORT INSPECTION.

On April 1, 1901, the inspection was reestablished at the fruit ports of Central and South America by the following detail of medical officers: R. H. Peters, La Ceiba, Honduras; J. Grey Thomas, Belize, British Honduras; Paul Osterhout, Bocas del Toro, Colombia; D. W. Goodman, Port Limon, Costa Rica; W. K. Fort, Livingston, Guatemala; W. H. Carson, Bluefields, Nicaragua; S. H. Backus, Puerto Cortez, Honduras.

REGULATIONS FOR GOVERNMENT OF FRUIT VESSELS.

These officers carry out their duties under the regulations prescribed in the following circular:

[Circular.]

SPECIAL REGULATIONS FOR THE GOVERNMENT OF VESSELS PLYING BETWEEN INFECTED OR SUSPECTED FRUIT PORTS AND PORTS OF THE UNITED STATES.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., August 31, 1900.

To United States Consular Officers, Masters and Owners of Vessels,
Collectors of Customs, National, State, and Local Quarantine Officers, and others:

To permit vessels from foreign ports with perishable cargoes of fruit to enter ports of the United States without detention in accordance with the provisions of the quarantine regulations, November 13, 1899, the following special regulations are promulgated, and will be enforced at the ports of departure:

SPECIAL RULES AND REGULATIONS FOR VESSELS ENGAGED IN THE FRUIT TRADE BETWEEN FOREIGN PORTS SUSPECTED OF BEING INFECTED WITH YELLOW FEVER AND PORTS OF THE UNITED STATES.

1. None of the crew shall be allowed to go on land, except the captain.
2. No one from the shore shall visit the boat, except the quarantine officers, customs officers, and agent of the company which charters the ship.
3. All laborers who may be taken on the ship for loading purposes must have all their baggage disinfected before boarding the vessel, and must have no intercourse with the shore subsequent to their entry upon the vessel until their final discharge therefrom.
4. No intercourse is to be allowed with persons on shore, except as provided in the preceding paragraphs.
5. No vessel in the harbor shall lie at any wharf, except as provided in special cases; but must be anchored in the river or harbor in midstream, and lighters, having been loaded by natives ashore, may be unloaded onto the ship by the laborers whose clothing has been disinfected.
6. The ships, if going up a river or harbor for fruit, shall not be allowed to bring any passengers down the river on their return.
7. All passengers must embark from the regular ports and must have been under the observation of the sanitary inspector of the United States for at least ten days prior to the departure of the ship and be provided with his certificate to that effect. Immediately preceding their embarkation their baggage must be disinfected in accordance with the quarantine regulations of November 13, 1899, the most convenient methods being six hours' exposure to formaldehyde gas or twenty-four hours' exposure to sulphur dioxide gas in a closed chamber, the clothing being hung up on lines for the better penetration of the gas. Under no circumstances shall any passengers be allowed to carry bedding or household effects. Where passengers come from elevated and noninfectible points in the interior to low coast towns for embarkation they should not be required to pass the ten days' period of observation in the latter places because of the danger of developing malarial or other tropical fevers. They should be required to bring a certificate from the United States consul or a reliable physician, stating that they have been under observation at such elevated and noninfectible interior point for ten days immediately preceding their arrival at coast towns. Their baggage should then be disinfected and they should be allowed to proceed without detention. Passengers taking ships bound direct to points north of the southern boundary of Maryland need not be detained.

8. Special attention should be paid to the sanitary condition and history of passengers arriving directly or indirectly from the Pacific coast towns of Central America.

9. All outgoing vessels must be provided with a bill of health in accordance with the law, and in addition thereto certificates in duplicate, signed by the medical officer attached to the consulate, and giving the name of the ship, her master, the number of crew, and a list of passengers, their sanitary condition, and their ultimate destination in the United States, and stating the health conditions of the port and surrounding country, of the ship and her crew, with any other pertinent information. This certificate shall be attached to the bill of health and a duplicate to the duplicate bill of health.

SPECIAL RULES AND REGULATIONS FOR VESSELS ENGAGED IN THE FRUIT TRADE BETWEEN FOREIGN PORTS INFECTED WITH YELLOW FEVER, OR WHERE YELLOW FEVER PREVAILS, AND PORTS OF THE UNITED STATES.

The foregoing rules and regulations shall apply also to vessels engaged in the fruit trade between foreign ports infected with yellow fever, or where yellow fever prevails, and ports of the United States, and are the special regulations provided for in Article II, paragraph 2, D, exception 3, of the Quarantine Regulations for Domestic Ports, November 13, 1899. Attention is called to the further requirement in said Article II, paragraph 2, D, exception 3, that these vessels shall carry no passengers; and also to the regulations to be observed at all foreign ports with regard to vessels leaving for the United States or its dependencies.

WALTER WYMAN,
Supervising Surgeon-General, Marine-Hospital Service.

Approved:
O. L. SPAULDING, *Assistant Secretary.*

LA CEIBA.

REPORT OF TRANSACTIONS AT THE PORT OF LA CEIBA, HONDURAS, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. R. H. PETERS.

LA CEIBA, HONDURAS, *August 10, 1901.*

SIR: In compliance with Bureau letter of July 18, I have the honor to submit report of the transactions at this station from April 1, 1901, up to July 1.

The station was opened on April 1, 1901.

The steamers on this coast are all loaded from lighters, as there are no wharves. They anchor about a half mile from shore and the fruit is then carried out in lighters alongside. All communication with the vessels are carried on with small boats. No passengers or baggage have left this port for the United States direct, but have gone by the way of Belize or Puerto Cortes, as the quarantine regulations of the States of Alabama and Louisiana prohibit the fruit steamers from carrying passengers except from specified ports.

Since the 1st of April 48 vessels have been inspected and given certificates; 787 crew inspected. Of the 48 vessels cleared 32 were for New Orleans, 13 for Mobile, and 3 for Tampa, Fla.

Only one case of contagious disease has come under my observation since my arrival in Ceiba—a case of diphtheria—which was reported in my weekly report of June 8, since which no other case has developed. Ceiba is well protected from infection as there is very little communication with any of the infected districts.

R. H. PETERS,
Acting Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Ceiba, Honduras, September 18, 1901.

SIR: I have the honor to submit a supplemental report covering the period from July 1 to September 15, 1901.

From the 1st of July up to the 15th of September 27 vessels were inspected and cleared for the United States; 471 crew inspected, all of whom were in good health. During the month of July only 8 vessels cleared from Ceiba. This small number was due to the United Fruit Company withdrawing its steamers from this coast during July and part of the month of August. Of the 27 vessels cleared 24 were for New Orleans, 1 for Mobile, 1 for Tampa, and 1 for New York.

The health of Ceiba remains satisfactory. There has been very little sickness during the season.

Respectfully,

R. H. PETERS,
Acting Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

BELIZE.

REPORT OF TRANSACTIONS AT THE PORT OF BELIZE, BRITISH HONDURAS, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. J. GREY THOMAS.

MARINE-HOSPITAL SERVICE,
Belize, British Honduras, July 31, 1901.

SIR: I have the honor to submit report of transactions at this port from April 1, 1901, to June 30, 1901, inclusive:

From the inclosure it will be seen that I have issued certificates to 34 vessels leaving for the United States, inspected 855 crew, issued certificates to 122 passengers from Belize, inspected 158 passengers in transit, making a total of 280; have disinfected 260 pieces of baggage. I have also issued certificates to 56 passengers bound for Port Barrios and Port Cortez; also disinfected 133 pieces baggage for these ports.

The sanitary conditions for the period have been good. There have been 66 deaths, none of a quarantinable nature.

All baggage is exposed to formaldehyde gas at least six hours. Certificates are issued to each passenger before buying his ticket. Without this no tickets can be issued. The two in his possession entitle him to board the vessel. All baggage is labeled, and these seals are not broken until after the departure of the vessel.

All vessels anchor from 1 to 2 miles from shore, the harbor being too shallow to permit them coming to the town.

Inclosed find copies of blank forms issued to vessels and passengers.

Respectfully,

J. GREY THOMAS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Belize, British Honduras, September 16, 1901.

SIR: I have the honor to submit report of transactions at this station from July 1, 1901, to and including September 15, 1901.

From the inclosure it will be seen that I have issued certificates to 32 vessels leaving for the United States, inspected 180 men composing crews of vessels, issued certificates to 74 passengers from Belize, inspected 147 passengers in transit, making a total of 221, and have disinfected 153 pieces of baggage.

I have also issued certificates to 54 passengers bound for Port Barrios and Port Cortez, and have also disinfected 104 pieces of baggage for these ports.

The sanitary conditions for the period have been good. There have been 42 deaths, none of a quarantinable nature.

All baggage is exposed to formaldehyde gas for at least six hours; it is then sealed and permitted to go aboard ship,

Certificates are issued to each passenger, and without this he is unable to obtain his steamer ticket.

All vessels anchor from 1 to 2 miles from the shore.

Inclosed find copies of certificates issued to vessels and passengers.

My report from April 1 to June 30, inclusive, was forwarded on July 31, 1901.

Respectfully,

J. GREY THOMAS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

BOCAS DEL TORO.

REPORT OF TRANSACTIONS AT THE PORT OF BOCAS DEL TORO, COLOMBIA, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. PAUL OSTERHOUT.

MARINE-HOSPITAL SERVICE,
Bocas del Toro, Republic of Colombia, August 5, 1901.

SIR: I have the honor to acknowledge receipt of Bureau letter, dated July 18, 1901, requesting a report of the transactions at this station from the beginning of the work, in the spring, to and including June 30, 1901; also a supplemental report covering the time from July 1, 1901, to and including September 15, 1901.

I have the honor to respectfully submit the following report of the transactions at this station, the methods employed, and the equipments in use:

The work of the Service was commenced at this place on April 3, 1901.

Equipment.—This consists of one autoclave for evolving gas from the glyco-chloroformol mixture, and is the property of the Service.

The house used to carry on the disinfection is the property of the United Fruit Company, and is divided into two rooms—one for the autoclave and other necessary material, the other for hanging the material to be fumigated. They also furnish a large room for the laborers to change their clothing.

There is also a Kinyoun-Francis disinfector at this place, which is the property of the United Fruit Company. This was purchased in order to meet the requirements of the Louisiana State board of health.

Means of boarding vessels.—The only means of boarding vessels is by boats furnished by the fruit companies.

Number of employees.—There are no employees; the acting assistant surgeon alone represents the Service.

Inspecting and certifying passengers.—There is no direct passenger traffic between this port and ports in the United States. The fruit companies do not deem it prudent, with such a limited amount of travel, to take the risk of carrying passengers.

Early in the season there was a special permit granted by the United Fruit Company for five passengers to go to New Orleans. These were visited by me at their residence. As these passengers were bound for New Orleans, their effects were disinfected in the Kinyoun-Francis disinfector.

They were required to send to the fumigating plant one suit of clothes to be worn when going on board of the steamer, which was returned to them after disinfection; all other wearing apparel was disinfected, packed, and stored in the fumigating house until time for transportation to the vessel, under the direction of the officer of the Service, thus avoiding reinfection. Certificates, form No. 148, were then issued to them.

Disinfection of vessels.—At the time of making this report this has not been necessary. Should this be required, under my administration and with the facilities now at my disposal, the only thing that could be done would be to fumigate the hold of the vessel with sulphur dioxide, to carry the autoclave on board and use it for the cabin and other quarters.

Number of vessels inspected	50
Number of pieces of baggage inspected (including 1 sewing machine)	7
Number of pieces of baggage disinfected	6
Number of persons inspected:	
Ships' crews	867
Passengers	5
Total	872

Officials boarding vessels.—After the first case of yellow fever was reported I succeeded in getting the alcalde to issue an order to the effect that all officials boarding vessels be required to have their clothing disinfected.

When vessels are expected to arrive the managers of the different companies are notified by cable (via Limon), and they immediately send a messenger to procure the clothing of the Government officials who are to board the vessel. These generally include the inspector of the port, his secretary, interpreter, and a custom-house guard. This clothing is disinfected by me, and is given a twelve-hour exposure to formaldehyde gas.

This is also applicable to the representatives of the companies and to the pilot, as well as to the representatives of the quarantine service.

The custom-house guard remains on the vessel during her trip to load fruit in the lagoon and until her final departure from this port.

Laborers and their effects.—The different companies furnish a suit of overalls, of a uniform color and material, to be worn by the men employed to stow the cargo. This is washed after each trip, and when dry is brought to the disinfecting chamber and given twelve hours' exposure to formaldehyde gas.

In case the vessel is going to New Orleans, the disinfecting is done with the Kinyoun-Francis disinfector; the clothing is placed in the steam chamber and a temperature 240° F. maintained for thirty minutes; care is exercised that all articles liable to damage are excluded and subjected to formaldehyde disinfection. This is generally done in the morning, and at night the clothing is removed to the dressing room, assorted, and hung up by number. The next morning the laborers gather at the dressing room, and remove their outer garments (keeping on only their undershirts and drawers), put on the fumigated suits, enter a barge, and are towed to the vessel. As the vessel is compelled to make a trip to other parts of the lagoon to procure her cargo, and the laborers are exposed to rain, etc., it becomes necessary for them to carry extra clothing. This clothing, also fumigated, is placed in a bag and sealed by me, to be delivered on board the vessel for distribution. I personally attend to all the fumigation, see that the laborers' clothing is changed, and accompany the barge to the vessel.

Boarding of vessels.—All vessels are boarded by me on their arrival here, prior to their departure to the lagoon to load fruit. It requires from twenty-four to thirty hours in the lagoon, after which they return to this point and are again boarded by me before sailing. The consular bill of health is then signed; a certificate, form No. 149, is issued conjointly with the bill of health.

During the time that the vessels are in the lagoon they are entirely from under my observation.

Suggestions for the improvement of the Service.—I would respectfully suggest that this station be furnished with a galvanized metallic rowboat about 14 feet long, to be used in boarding vessels. Although the fruit companies are very accommodating, the work of the station can be facilitated and much delay avoided.

As there are many vessels engaged in the fruit trade directly with southern ports of the United States, the work of the Marine-Hospital Service can be much better carried out if an appropriation of $75 per month be allowed this station for the employment of a man to aid in watching the vessels while in port, in order to prevent communication with the shore, to assist in seeing that the clothing of the laborers is changed, and that nothing is taken on board vessels unless previously fumigated.

The employment of this extra help was suggested in a report by Wm. H. Carson, acting assistant surgeon, at this port under date of November 20, 1900.

Respectfully,

PAUL OSTERHOUT,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Bocas del Toro, Republic of Colombia, September 17, 1901.

SIR: I have the honor to acknowledge receipt of Bureau letter, dated September 6, 1901, requesting prompt attention in forwarding the supplemental report of the transactions at this station from July 1, to September 15, 1901, inclusive.

Complying with this request I herewith submit the following report:

Number of vessels inspected	29
Number of persons inspected:	
Ships' crews	589
Passengers	1
Number of pieces of baggage disinfected	2

Infectious and contagious diseases.—There have been 10 known cases of yellow fever at this place, as follows: 2 deaths and 8 recoveries. These cases occurred in the period embraced between June 23 and August 21, 1901.

Respectfully,

PAUL OSTERHOUT,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

PORT LIMON.

REPORT OF TRANSACTIONS AT THE PORT OF PORT LIMON, COSTA RICA, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. D. W. GOODMAN.

MARINE-HOSPITAL SERVICE,
Port Limon, Costa Rica, July 29, 1901.

SIR: I have the honor to make the following report of the transactions at this station for the trimester of April, May, and June, 1901:

I arrived in Limon April 4, and immediately assumed the duties for which I was detailed.

The equipment for disinfection consists of an autoclave and the necessary formaldehyde solution, furnished by the Marine-Hospital Service, and an air-tight room of 1,200 cubic feet capacity, furnished by the United Fruit Company, in which baggage of passengers and the clothing of all laborers allowed aboard the fruit vessels are disinfected.

On the day of my arrival I found a case of yellow fever in a hospital, which was reported to the Bureau, and when known to the United Fruit Company, who alone runs ships from Limon to southern ports of the United States, influenced them to prohibit all passenger traffic from here to said ports. As sporadic cases of yellow fever have occurred at various intervals of time since April 4, this prohibition has been continued, thus removing any necessity for disinfecting baggage. The clothing of laborers engaged on the fruit vessels was disinfected by formaldehyde gas from the generator until the arrival of a modern steam disinfecting chamber of the Kinyoun-Francis type, owned by the United Fruit Company and operated by an engineer and fireman of said company, under the supervision of the sanitary inspector of the Marine-Hospital Service and of the Louisiana State board of health. With this apparatus the laborers' clothes and baggage, should there be any, are subjected to a steam bath at 230° F. for one hour, then dried by vacuum process. Articles liable to injury from steam or heat are disinfected with formaldehyde.

Port Limon is situated on the seashore, with a harbor unprotected from rough weather, hence vessels can not lie at anchor and take on fruit from barges without great loss of time and therefore of fruit. A new iron pier has been erected, extending one-half mile from shore; at its end fruit vessels lie and are there loaded from cars brought from the banana plantation to the ship's side. In conformity with the regulations of the Marine-Hospital Service vessels are so placed in daytime only, anchoring in the offing at night. No one from the pier is allowed to board the vessels except the laborers, and they must wear disinfected clothing, so marked as to be easily recognized. No one from the ship is allowed ashore, not even the captain, except in cases of emergency, which seldom arise, as the company's agent enters and clears the ship from the custom-house. All fruit vessels from Mobile and New Orleans, the only southern ports now dealing with Limon, have aboard medical inspectors appointed by the quarantine boards of those ports, who, aided by a local inspector employed by the fruit company, but under the supervision of the medical inspectors stationed here, see that the prescribed quarantine regulations are carried out.

Just previous to the departure of each vessel an inspection of the ship and crew is made, temperatures of all on board taken, and any evidence of sickness is noted on the certificate attached to the consular bill of health, copies of the blank forms of which are herewith inclosed.

During the time covered by this report 62 vessels and their crews have been inspected, and rarely has there been found a case of sickness of any kind aboard, and at no time anything suspicious of a quaratinable disease.

There has been no smallpox in or around this port and no vaccination done.

Limon, having among its inhabitants many nonimmunes to yellow fever and admission to this port of persons and baggage from places more or less infected with that disease being permitted without let or hindrance, a constant and careful watch has to be maintained by the medical inspectors stationed here. Frequent visits to the three hospitals, rigid examination of the diagnoses of deaths recorded, and daily inquiries among both physicians and responsible laymen are some of the duties and labors of the acting assistant surgeon, U. S. Marine-Hospital Service. Free access to the hospitals at all times and a courteous readiness to give information have made these duties more pleasant than expected.

Limon is far from being a healthful place, for while the central or business portion has paved streets and sidewalks, kept in a good sanitary condition, the outskirts are swampy, badly drained, and in a very unsanitary condition.

A system of underground sewers has been constructed, without however sufficient fall to empty themselves, and no provision has been made for flushing. Again, only a small portion of the buildings are connected with the system; the others continue to use surface closets, which are rarely cleaned.

For the three months 56 deaths have occurred, which, with the estimated population of 4,000, gives an annual death rate per thousand of 56. Malarial fever in its various forms, intestinal troubles, and tuberculosis, in the order named, are the causes of most of the deaths.

Respectfully,

D. W. Goodman,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

Supplemental report.

Marine-Hospital Service,
Port Limon, Costa Rica, September 16, 1901.

Sir: Pursuant to directions in Bureau letter of July 18, 1901, and as supplementary to my report of July 29, 1901, I have to make the following report of the transactions at this station from July 1 to September 15, 1901, inclusive:

To 60 steamships have bills of health been given, after inspection of them and their crews.

On account of the continued presence of yellow fever at this port there has been no passenger traffic with the Southern ports of the United States, hence no baggage, thus limiting disinfection to the clothes worn by the laborers on the fruit vessels while in this port This has been done with great care, and as these laborers are the only persons from Limon allowed to go aboard the ships, and none from the ships to come ashore, there is very little risk of infection being conveyed to the crew or vessel. Another point of safety worthy of notice is that all these laborers, without exception, are Jamaican negroes. I insisted upon this of the managers of the fruit companies at the beginning of the quarantine season, as I believe those negroes are practically immune to yellow fever.

Limon, with an estimated population of 4,000, had from July 1 to September 15, 1901, 76 deaths from all causes, principally as follows:

Yellow fever (41 cases)	16
Malarial fever (including hæmoglobinuria)	18
Intestinal disorders in children	8
Pneumonia and bronchitis	4
Dysentery (probably malarial)	4
Tuberculosis	3
Typhoid fever	3
Other causes	20
Total	76

These figures would give the annual death rate per thousand of 90. Making all allowance for the sick who are brought here to die, for the lack of personal hygiene and cleanliness among many of the inhabitants, the fact remains that Limon is not a healthful place.

There has been no smallpox or other infectious diseases save as above mentioned.

Respectfully,

D. W. Goodman,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

LIVINGSTON.

REPORT OF TRANSACTIONS AT THE PORT OF LIVINGSTON, GUATEMALA, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. W. K. FORT.

LIVINGSTON, GUATEMALA, *November 2, 1901.*

SIR: I have the honor to submit herewith report of transactions at this station during the period from April 3, 1901, to June 30, 1901, inclusive.

Respectfully,

W. K. FORT,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SUPERVISING SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

[Inclosure.]

Date.	Vessel.	Crew.	Destination.
Apr. 3	Steamship Esther	19	New Orleans.
10	Steamship Managua	17	Mobile.
11	Steamship Bergensenn	16	New Orleans.
24	Steamship Managua	17	Mobile.
May 2	Steamship Esther	19	New Orleans.
17	.....do	19	Do.
24	Steamship Managua	17	Mobile.
31	Steamship Esther	19	New Orleans.
June 7	Steamship Managua	17	Mobile.
7	Steamship Bergensenn	16	New Orleans.
14	Steamship Esther	19	Do.
20	Steamship Bergensenn	16	Do.
20	Steamship Managua	17	Mobile.
	Total	228	

No passengers.

Supplemental report.

LIVINGSTON, GUATEMALA, *September 15, 1901.*

SIR: I have the honor to make a condensed summary report of the transactions at this port from July 1, and including September 15, 1901, which I submit on a separate paper.

Respectfully,

W. K. FORT,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

[Inclosure.]

Transactions at the port of Livingston, Guatemala, from July 1 to September 15, 1901, inclusive.

Date.	Vessel.	Destination.	Crew.	Passengers.
July 3	Steamship Sumner	New Orleans via Belize	14	
4	Steamship Bergensenn	.....do	17	
4	Steamship Managua	Mobile via Belize	17	
8	Steamship Calabria	Hamburg via Galveston	39	3
18	Steamship Bergensenn	New Orleans via Belize	17	
18	Steamship Managua	Mobile via Belize	17	
Aug. 1	Steamship Bergensenn	New Orleans via Belize	17	
1	Steamship Managua	Mobile via Belize	17	
8	Steamship Esther	New Orleans via Belize	18	
Sept. 4	.....do	.....do	18	
11	Steamship Managua	Mobile via Belize	17	
12	Steamship Bergensenn	New Orleans via Belize	17	
	Total		225	3

Number of pieces of baggage disinfected, 7.

BLUEFIELDS.

REPORT OF TRANSACTIONS AT THE PORT OF BLUEFIELDS, NICARAGUA, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. WM. H. CARSON.

MARINE-HOSPITAL SERVICE,
BLUEFIELDS, NICARAGUA, *August 1, 1901.*

SIR: I have the honor to transmit herewith, in compliance with instructions in Bureau letter dated July 19, 1901, and received here July 30, 1901, my report of the transactions at this station from the time operations were begun in the spring to and including June 30, 1901.

Work was begun at this station April 3, 1901.

The equipment at my disposal consists of one autoclave (formaldehyde generator) and lamp, also one carboy of formaldehyde mixture.

There are no employees at this station; all the assistance required in handling baggage, and laborers' clothing for disinfection, being furnished by the Bluefields Steamship Company, Limited.

Disinfection of passengers' baggage, as well as the clothing worn by the laboring fruit crew taken from this port to the "fruiters," is done in a closed room, conveniently located near to the water's edge, and subjected to more than six hours' exposure to formaldehyde gas. Bedding and household effects are prohibited.

Vessels are boarded off "Bluefields Bluff," 5 miles distant and opposite the town of Bluefields—the depth of water in the lagoon not permitting nearer approach of seagoing vessels to the town.

The fruit company furnish a small steamer which transfers passengers and disinfected baggage from the town (Bluefields) to the custom-house, at "Bluefields Bluff," where passengers' baggage is inspected by the Nicaraguan port officials and then transferred to the steamers anchored out in the bay.

All baggage is transferred from the disinfecting room to the small steamer previously mentioned, a very short distance, and there is but little if any danger of reinfection of baggage en route to the ship.

The following statistics are herewith furnished:

Number of vessels inspected	29
Number of crew inspected	343
Number of passengers inspected	85
Total number of persons inspected	428
Number of pieces of baggage inspected	129
Number of pieces of baggage disinfected	129

I inclose herewith copies of the blank forms now in use by me.

Respectfully,

WM. H. CARSON,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Bluefields, Nicaragua, September 16, 1901.

SIR: I have the honor to transmit herewith, in compliance with Bureau letter dated July 19, 1901, my supplemental report of the transactions at this station covering the period from July 1, 1901, to and including September 15, 1901.

The following statistics are herewith furnished:

Vessels inspected	17
Crew inspected	278
Passengers inspected	60
Total	338
Pieces of baggage inspected	92
Pieces of baggage disinfected	92

Without exception, all of the 17 vessels inspected were fruit carriers from Bluefields to New Orleans, and only such vessels as had medical officers aboard, commissioned by the Louisiana State board of health, carried passengers from this port.

During this period, July 1, 1901, to and including September 15, 1901, there have been 33 deaths at this port or its immediate vicinity, mainly due to malarial fever and its varied complications. I may state here that the port of Bluefields has at the present time an officially estimated population of 4,000, and that up to this date there has not been entertained the slightest suspicion as to the presence of any contagious or infectious disease, excepting the one case of smallpox I reported June 26, 1901.

Since receiving here, July 17, 1901, the lead seals and seal press, all passengers' baggage, after disinfection and the inspection by the customs officials at "Bluefields Bluff," is then and there sealed by me before transfer to the ship about to clear for the United States.

Respectfully,

WM. H. CARSON,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

PUERTO CORTEZ.

REPORT OF TRANSACTIONS AT THE PORT OF PUERTO CORTEZ, HONDURAS, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. SAMUEL HARRIS BACKUS.

MARINE-HOSPITAL SERVICE,
Puerto Cortez, July 30, 1901.

SIR: I have the honor in answer to your letter of July 18, directing me to transmit to the Bureau, immediately, a report of the transactions at my station from the time that operations were begun in the spring to and including June 30, 1901, do hereby submit my report:

Work was begun at Puerto Cortez Thursday, April 4, 1901.

My equipment consists of disinfecting room (air-tight), autoclave and burner, formalin mixture (1½ carboy). We have no means of boarding vessels. All vessels at this port load at dock. There are no employees.

As to passengers, all local people come under general rule, but those coming from healthy high interior are not detained ten days; but of course all baggage is disinfected required time. Passengers from surrounding coast towns always are required to have the certificate of local inspector, otherwise are detained ten days.

Baggage is disinfected by six hours' exposure to formaldehyde gas in closed chamber. No vessel has ever required disinfection.

Inclosed are blanks in use by me. No persons have been vaccinated.

Vessels inspected	44
Pieces of baggage inspected and passed	19
Pieces of baggage disinfected and passed	252
Persons inspected	135

In addition to this the suits of all laborers who board any of the vessels loading at the wharf are disinfected with formaldehyde. They use two sets of special garments, each set being washed each time previous to disinfection.

Respectfully,

SAMUEL HARRIS BACKUS,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Puerto Cortez, September 18, 1901.

SIR: According to instructions contained in Bureau letter of July 18, 1901, instructing me to forward, as soon as possible, a report of transactions at my port from April 1 to and including June 30, 1901; also supplemental report from July 1 to September

15, 1901, inclusive, I have the honor to hereby make the last-named report, having already made my report of transactions from April 1 to June 30, inclusive.

I have done the following since June 30 up to present time (September 15):

Steamships inspected	37
Passengers inspected	145
Pieces of baggage disinfected	231
Pieces of baggage inspected	12

Other conditions remain as before.

Respectfully,

Samuel Harris Backus,
Acting Assistant Surgeon, U. S. Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

Hawaii.

DETAIL OF CHIEF QUARANTINE OFFICER FOR THE TERRITORY OF HAWAII.

On August 31, 1900, the medical officer in command, Marine-Hospital Service, Honolulu, Hawaii, was detailed by the honorable the Secretary of the Treasury chief quarantine officer for the Territory of Hawaii.

Quarantine is now maintained at the ports of Honolulu, Kahului, Hilo, and Kihei. Extensive contracts have been let for repairing the buildings now on the quarantine island in Honolulu Harbor and for erecting new structures to assist in handling the large number of vessels and passengers arriving in Honolulu from suspected ports.

INSTALLATION OF DISINFECTING MACHINERY ON THE CHANNEL WHARF, HONOLULU.

In lieu of the floating disinfecting plant at the port of Honolulu it was considered advisable to establish a stationary plant on the channel wharf in the harbor, a portion of the said wharf having been placed at the disposal of the Marine-Hospital Service for such purpose by the superintendent of public works, under date of October 16, 1900.

A sulphur furnace, boiler, engine, fan, and pipes were forwarded to Honolulu and installed upon the wharf, partitions being erected in the wharf shed for the reception of the machinery. A steam chamber will shortly be forwarded for installation at the same place.

HONOLULU AND SUBPORTS.

Report of Transactions at the Port of Honolulu, Hawaii, and at the Subports of the Hawaiian Islands during the Fiscal Year ended June 30, 1901; also Supplemental Report of Transactions from July 1 to September 15, 1901, Inclusive.

By P. A. Surg. L. E. Cofer.

Marine-Hospital Service,
Honolulu, Hawaii, August 9, 1901.

Sir: In compliance with Bureau letter of July 18, 1901, I have the honor to make the following report of the transactions at this station from September 15, 1900, to and including June 30, 1901, as follows:

PERSONNEL FOR THE TERRITORY OF HAWAII.

P. A. Surg. L. E. Cofer, chief quarantine officer, Honolulu, Oahu.

P. A Surg. L. E. Cofer (in command), supervisor of work in all departments, including special duty when necessary.

Asst. Surg. R. L. Wilson, in charge division of freight inspection.

Asst. Surg. L. P. H. Bahrenburg, in charge division of incoming quarantine and steam launch *Oahu*.

Steam launch Oahu.—Frank Dalton, pilot; responsible for care and navigation of launch. Eugene B. Lee, engineer; responsible for care of machinery of launch. Charles Giter, deck hand; reporting to pilot. Charles Miller, fireman; reporting to engineer.

Asst. Surg. R. L. Wilson, in charge of hospital and out-patient departments of marine-hospital division.

Hospital Steward Frank L. Gibson, in charge division of correspondence and accounts, United States quarantine and marine-hospital office. Raphael Kahalilani, messenger.

Supt. John D. McVeigh, in charge division of attendants and general quarantine details.

United States quarantine station.—James K. Wright, engineer and assigned duty; Alfred Dahlstrom, nurse and assigned duty; Ah Kong, cook; Samuel Pinao, boatman and assigned duty; F. Seijiro, yardman and assigned duty; L. R. Bartlett, fireman at quarantine station and channel wharf and assigned duty; Charley Kekuew, assistant to superintendant, also house cleaner and painter.

United States quarantine disinfecting wharf.—Charles Campbell, watchman and assigned duty.

Hilo, Hawaii.—Acting Asst. Surg. John J. Grace.

Kahului, Maui.—Acting Asst. Surg. John Weddick.

Kihei, Maui.—Acting Asst. Surg. R. H. Dinegar.

Lahaina, Maui.—Acting Asst. Surg. ——— ———.

Koloa, Kauai.—Acting Asst. Surg. ——— ———.

INCOMING QUARANTINE.

This division is operated by Assistant Surgeon Bahrenburg, who boards all vessels and inspects all passengers and crews. In the inspection of vessels from infected ports the acting assistant surgeon here is especially detailed as an assistant to the boarding officer. The medical officer in command is always sent for as a consultant, when he is not already aboard vessels having suspicious sickness.

A blank form, No. 1, has been gotten up by Assistant Surgeon Bahrenburg, which is now in use on the oriental lines. In accordance with the grouping in this form are the passengers and crew arranged on the deck for examination. After bills of health, ship's log, papers, manifests, etc., are gone over the inspection is conducted as follows:

CREWS.

If white, an inspection with roll call after muster.

If Asiatic, an inspection of cervical, axillary, and femoral glands, with temperature and pulse taken in case of any person whose general appearance would indicate the necessity therefor.

PASSENGERS.

Steerage passengers are next examined, the three oriental nationalities being separated, the same examination being given as in the case of the Asiatic crew.

Second cabin or European steerage subjected to muster and special inspection.

First cabin inspected by roll call.

Stowaways inspected as are the steerage.

In the inspection of all persons aboard particular attention is paid to the possible presence of any contagious disease, including leprosy.

The sick are given special attention and the history of the case and the temperature chart taken into consideration. The master of the vessel is questioned as to the presence of live or dead rats on the voyage. The pratique is given in the case of vessels going to or from infected ports to include rat funnels on all lines and a space of 8 feet to be maintained between vessel and dock. In the case of regular navy vessels the certificate of the chief medical officer is taken. In the case of army transports the certificate of the chief medical officer is accepted when circumstances warrant, this to apply solely to enlisted men and passengers.

The crew are always mustered and examined separately.

The boarding hours are from 6.30 a. m. to 9 p. m, provided after sundown sufficient artificial light and all facilities for an efficient inspection are furnished.

In the case of belated mail steamers this inspection is made up to midnight, provided, always, that transportation be furnished to the boarding officer by the steamship company and sufficient light is afforded for a careful inspection of all passengers and crew after they are regularly mustered.

TRANSACTIONS OF INCOMING QUARANTINE DIVISION.

Summary of vessels boarded between September 15, 1900, and June 30, 1901.

Steamers boarded from domestic ports	128
Steamers boarded from foreign ports	76
Total	204
Crew on board	25,750
Passengers on board	45,580
Stowaways on board	144
Total	71,474
Sailing vessels boarded from domestic ports	183
Sailing vessels boarded from foreign ports	98
Total	281
Crew on board	3,989
Passengers on board	394
Stowaways on board	2
Total	4,385
Total vessels boarded	485
Total crew examined	29,739
Total passengers examined	45,974
Total stowaways examined	146
Total persons examined	75,859

DIVISION OF FREIGHT INSPECTION.

Assistant Surgeon Wilson has charge of this inspection work.

FREIGHT INSPECTION.

This is confined to oriental freight, which, after its preliminary disinfection in situ by sulphur dioxide, is subjected to a gross examination by comparing the visé lists from the medical officers of this service stationed in the Orient with the invoices. Samples of all unviséed articles are opened on the wharf and suspected freight barred from landing or disinfected by immersion in 4 per cent formalin solution, provided the articles show soil contamination, especially if the latter be in a moist condition. All unviséed moist articles in crocks and cans are rejected.

Through the courtesy of the collector of customs all consignees are required to report to Assistant Surgeon Wilson with their freight permits, and no freight is liberated until his indorsement is made thereon. His indorsement can cover the freight on the wharf as a whole or be made subject to a personal inspection of the 10 per cent of each entry examined in the appraiser's office. Any freignt to be disinfected is hauled to the channel wharf by the bonded drays and formally released to the collector of customs after disinfection.

Total number of packages of suspected oriental cargo for Honolulu	65,911
Total number of packages, contents examined	597
Total number of packages disinfected	61

QUARANTINE STATION.

Supt. John D. McVeigh is in immediate charge of the attendants and of the details of the work done at the quarantine station. Our capacity at the station on July 1, 1901, is as follows:

First-cabin passengers	24
Patients in contagious and noncontagious hospitals	10
Patients in Asiatic hospital	5
Second-cabin passengers	75
Asiatics	1,000

Six houses are now under construction and the increased capacity at the quarantine station, including the facilities existing for detaining persons under observation and for treating the sick, will be fully described in the supplemental report of tranactions from July 1, 1901, to and including September 15, 1901, which follows.

On account of the large amount and the variety of improvements now being made at the quarantine station, both under authorized contract and by the station force, a description of the disinfection plant and the equipment there will be included in the supplemental report as by that time a more or less complete working organization will have been effected.

The transactions at the quarantine station from September 15, 1900, to and including June 30, 1901, are as follows:

In hospital:	
Smallpox	6
Deaths	1
Measles under observation because of exposure to smallpox	38
Chicken-pox under observation for diagnosis	3
Leprosy	1
In detention:	
First cabin	3
Asiatics	1,388
Asiatics vaccinated	433
Asiatics bathed	1,388
Porto Ricans bathed	524
Pieces of baggage disinfected	2,984

CHANNEL WHARF.

The use of this wharf has been limited, on account of the lack of sufficient depth in front of it, to vessels of 24 feet draft.

The sulphur furnace has been duly installed there and two large freight-disinfecting rooms (capacity 900 tons) have just been completed.

The dredging now going on will be completed in about two weeks, then this wharf will be available for the reception of vessels of any draft. There were no transactions on this wharf worthy of mention up to July 1, 1901. A description of the equipment there will be given in the supplemental report, when it is believed the steam chambers intended for this wharf will have arrived.

UNITED STATES QUARANTINE AND MARINE-HOSPITAL OFFICE.

The accounts, records, etc., are in the charge of Hospital Steward Gibson. While no report on work performed in this division can be given, there is no doubt that the volume of business transactions in this office will compare favorably with that of any office in the service.

SUBSTATIONS IN HAWAII.

It is proposed to give at present only the actual transactions at these substations, reserving a discussion of the present and contemplated manner of conducting quarantine at these places for the supplemental report, as in the meanwhile the localities will have been inspected and the conditions and requirements better understood.

Hilo:	
Vessels inspected and passed	44
Kahului, Maui:	
Vessels inspected and passed	41
Kihei, Maui:	
Vessels inspected and passed	3

Respectfully,

L. E. Cofer,
Passed Assistant Surgeon, M. H. S.,
Chief Quarantine Officer Territory of Hawaii.

The Surgeon-General U. S. Marine-Hospital Service.

[Inclosure.]

SS. ——— ———.

From ——— – ———. Date of arrival, ——— – ———.

Summary of persons on board.

CABIN.

	Men.	Women.	Children.	Total.	For Honolulu.
Europeans					
Chinese					
Japanese					
Total					

EUROPEAN STEERAGE.

Europeans					
Chinese					
Japanese					
Total					

ASIATIC STEERAGE.

Europeans					
Chinese					
Japanese					
Total					

CREW.

	Europeans.	Chinese.	Japanese.	Total.
Deck department				
Purser's department				
Engineer's department				
Stowaways				
Total				

NOTE.—Officers will be included in their several departments.

——— ———, *Purser.*

Supplemental report.

MARINE-HOSPITAL SERVICE,
Honolulu, Hawaii, September 18, 1901.

SIR: In compliance with Bureau letter of July 18, 1901, I have the honor to make my supplemental report of the transactions at this station from July 1 to and including September 15, 1901, as follows:

TRANSACTIONS OF INCOMING QUARANTINE DIVISION.

Summary of vessels boarded between July 1 and September 15, 1901.

Steamers from domestic ports	27
Steamers from foreign ports	23
Total	50
Crew on board	7,047
Passengers on board	8,334
Stowaways on board	12
Total	15,393

Sailing vessels from domestic ports	44
Sailing vessels from foreign ports	24
Total	68
Crew on board	911
Passengers on board	84
Stowaways on board	2
Total	997
Total vessels boarded	118
Total number of crew inspected	7,958
Total number of passengers inspected	8,418
Total number of stowaways inspected	14
Total	16,508
Division of freight inspection:	
Total number of packages of oriental freight	89,256
Total number of packages contents examined	300
Total number of packages contents disinfected	142
Quarantine station division:	
First-cabin passengers	0
Patients in hospitals	0
Second-cabin passengers	0
Asiatics detained	629
Asiatics bathed	629
Asiatics vaccinated	266
Pieces of baggage disinfected	968
Outgoing quarantine division:	
Steamers inspected	14
Sailing vessels inspected	45
Crew inspected	624
Cabin passengers inspected and passed	422
Steerage passengers inspected	212
Pieces of baggage disinfected	782

The outgoing quarantine inspection was begun on July 9 and discontinued on August 17, 1901.

The method of certifying passengers was based from day to day on the actual conditions existing in Honolulu. Through the courtesy of the Hawaiian Territorial board of health this office was instantly notified of any change in the sanitary situation here and given ample facilities for the study of the latter, with a view to regulating our restrictions on outgoing traffic accordingly.

The board of health kept in detention every person presumably exposed to the infection of the various foci, and upon their expressed willingness to notify this office of the failure of any one of those so detained to report for inspection any passenger not included in this class was allowed to purchase a ticket, but not to embark until after an inspection had been made by a medical officer of this Service. This inspection included also the crew of the vessel.

At the time this inspection was inaugurated the cases had begun to appear less frequently, so there was a reasonable probability that the situation would steadily improve. Had the disease appeared with increased rapidity, or the board of health lost its control over those in detention, additional restrictions would have been made accordingly.

The baggage was disinfected by formaldehyde in 40 per cent solution. This was applied to each article by means of the tree atomizer pump, which throws a fine spray and leaves the garment or article to be disinfected uniformly wet. The clothes after being replaced in their containers were put into the "Honolulu baggage" compartment of the steamer, there to remain the whole time of the voyage.

The placing of the baggage in the special compartment was in itself a safeguard against its reinfection en route. The ships themselves were especially protected against infection while at the dock by the use of rat funnels, and a space varying from 3 to 10 feet was always maintained between vessel and dock. A report of the exact status of the town was forwarded on every steamer to the quarantine officer at the port of destination and a special certificate, made out on the inclosed form, given to the ship for the quarantine officer's information. At the time this work was done we had no facilities for disinfecting vessels and no other facilities for disinfecting baggage except the one mentioned.

EQUIPMENT AT THE QUARANTINE STATION.

Executive building.—This is now under construction, the strike at San Francisco having delayed its completion. This is located at the island end of the walkway to the boat landing, and from it one is able to command a view of the whole of the quarantine station and also of Honolulu Harbor. The lower floor has an executive office, surgeon's office, bacteriological laboratory room, and dispensary. The upper floor has quarters of two rooms each for the superintendent and one unmarried medical officer. This house is rat and vermin proof, having all of the studding on the outside and the two layers of wall closely laid in apposition.

Disinfecting warehouse.—This is situated directly back of the executive building. Its dimensions are 40 by 60 feet. It contains one large steam chamber, one large boiler, and an electric dynamo. The boiler and steam chamber are in good order and condition, and are used after the arrival of every oriental steamer. Directly back of this warehouse is another room, greatly in need of repair. This contains an ordinary sulphur furnace, engine, and fan.

The sulphur pipe leads into another room directly back of this one, and in equally bad repair, where the baggage is subjected to long exposure to sulphur gas, the articles being either hung on lines or left in situ in the case of ordinary freight carried as baggage.

Asiatic corrals.—To the right of the disinfecting warehouse these corrals are located. They consist of rough sheds inclosed by a high paling fence. Their combined capacity is 500. They are in a very dilapidated condition.

The new cabin passengers' building is nearing completion, and with the old building will enable 75 passengers to be comfortably housed. The furniture and general equipment for these houses have not arrived at this writing.

The new contagious hospital is nearing completion and will accommodate 16 patients. It is rat and vermin proof and is constructed and arranged so as to admit of easy and complete disinfection. A small cook house is being erected for this hospital and also for two other buildings which are near by and which will be fitted up as additional hospitals in the event two different quarantinable diseases are brought to the station at the same time. Our combined hospital capacity will then be 35 patients. There are two buildings near the cabin passengers' quarters, which when repaired will be fitted up as noncontagious hospitals for men and women, respectively.

The new barracks buildings, four in number, are also nearing completion; they will have a combined capacity of 200 persons.

CHANNEL WHARF.

The dredging having been completed on September 1 of this year, all vessels from infected ports have been placed at this wharf since that time. This wharf has been provided with two drawbridges, one of which is always kept elevated, so that all ingress and egress is confined to an opening only 12 feet wide, and with a watchman at this opening, a precaution always taken when suspected vessels are at the wharf, the escape of rats to the mainland can be easily prevented.

Two steam chambers are expected to arrive in the near future, when this wharf will be well equipped for almost any emergency. Its close proximity to other shipping makes it in a great many ways undesirable for quarantine purposes, and its use should be confined to suspected vessels from infected ports, and for this purpose it is probably one of the most complete and practical plants in the world.

It is hoped that a wharf suitable for the treatment of infected vessels will soon be provided for this station.

Transactions.

Vessels from Orient	3
Cargoes disinfected	3

SUBSTATIONS IN THE HAWAIIAN ISLANDS.

The transactions at the substations between June 30, 1901, and September 15, 1901, are as follows:

Hilo, Island of Hawaii:	
Vessels inspected	9
Passengers inspected	9
Crew inspected	108
Kahului, Island of Maui:	
Vessels inspected	4
Passengers inspected	2
Crew inspected	55

Kihei, Island of Maui: No transactions.
Lahaina, Island of Maui:

Vessels inspected	1
Crew inspected	10

Koloa, Island of Kauai: No transactions.

The work at the substations is performed by acting assistant surgeons and consists simply of the inspection of vessels and their passengers and crews. Any vessel requiring treatment would be remanded to Honolulu for this purpose. With the exception of Hilo none of the above-named ports have any wharves, and on account of the gradual slope of the beach no vessel can approach nearer than from one-fourth to one-half mile from the shore. From a quarantine standpoint these ports are reasonably safe from infection, and it will probably never be necessary to further equip them. It will be ultimately necessary, however, to equip and maintain a small quarantine station at the port of Hilo, as this is destined to grow in importance as the Island of Hawaii, the largest island in the group, develops.

Respectfully,

L. E. Cofer,
Passed Assistant Surgeon, Marine-Hospital Service,
Chief Quarantine Officer, Territory of Hawaii.

The Surgeon-General U. S. Marine-Hospital Service.

[Inclosure.]

SPECIAL CERTIFICATE FROM U. S. QUARANTINE OFFICE AT HONOLULU, HAWAII.

——— —, 190–.

This is to certify that ——— ——— (name of vessel), of ——— ———; from ——— ———, bound for ——— ———, has in all respects complied with the special quarantine restrictions hereinafter described, and is to the best of my knowledge and belief free at this time from infectious disease or the danger of conveying the same.

Cabin passengers inspected and passed	
Steerage passengers inspected and passed	
Pieces of cabin passengers' baggage disinfected	
Pieces of steerage passengers' baggage disinfected	

(*a*) Vessel unloaded at distance of —— feet from wharf.
(*b*) Vessel unloaded in midstream.
(Erase line not wanted.)

——— ———,
P. A. Surgeon, U. S. M. H. S., Chief Quarantine Officer, Hawaiian Islands.

To the United States Quarantine Officer:
——— ———.

HILO.

INSPECTION OF THE PORT OF HILO, HAWAII, AS A PROBABLE SITE FOR THE ESTABLISHMENT OF A FULLY EQUIPPED QUARANTINE STATION.

The increasing traffic at the port of Hilo, Hawaii, will make it necessary to consider the establishment of a fully equipped quarantine station at that port in the near future. With this object in view a board, consisting of P. A. Surg. L. E. Cofer, Marine-Hospital Service, Honolulu, and the deputy collector of customs Hilo, Hawaii, was appointed April 15, 1901, by the honorable the Secretary of the Treasury, for the purpose of inspecting the available sites at or in the vicinity of Hilo and reporting upon same. The board was authorized to call into consultation pilots, agents of commercial lines, or other persons who might be interested, for the purpose of obtaining all necessary information regarding the best site for such a quarantine station. The following is the report of the board:

MARINE-HOSPITAL SERVICE,
Hilo, Hawaii, May 16, 1901.

SIR: In obedience to your letter of April 15, 1901, in which we were designated as chairman and member, respectively, of a board appointed by you to investigate and report upon a site for a quarantine station for the port of Hilo, Hawaii, we have the honor to report as follows:

GENERAL CONDITIONS.

In our opinion, from evidence submitted, there is not an available quarantine site in this port, properly removed from the shipping, from which the usual disinfecting wharf could be built and operated with safety either to said wharf or to vessels moored there. Therefore the use of any site selected must be confined to the detention of sick and suspected persons, the work of disinfecting vessels being only possible of performance by means of a floating disinfecting scow, which may be kept permanently safe in the anchorage designated on the large working map No. 1.

RECOMMENDATIONS.

First. That the certain plot of land, drawn in and otherwise described on the inclosure designated "Proposition No. 3, accepted," situated on the southeast shore of the Hilo Bay, at a place called Puhi, distant by water from Hilo 2.65 miles and by road 3.22 miles, of 50 acres area, with shore line of 1,000 feet, with permanent landing and protection for steam launch and small boats and for temporary anchorage for large vessels, be transferred to the Marine-Hospital Service as a site for a quarantine station for the port of Hilo, Hawaii. The board has given this question a great deal of careful study, and it is believed that this locality, while by no means an ideal one for the purpose, is the only site in Hilo Bay or vicinity worthy of consideration. This land, although vested in the United States Government by virtue of the "Act to provide a government for the Territory of Hawaii," is under lease for a further period of seventeen years to the Waiakea Mill Company, of Hilo. A recommendation of release under terms has been promised us by the manager, Mr. C. C. Kenedy, of the Waiakea Mill Company, located here. We have been advised that a proposal of sublease will be furnished the chairman upon his return to Honolulu. Said proposal of sublease, or a possible written refusal of same, should the directors take such action, will be attached to and become a part of the map entitled "Proposition No. 3, accepted."

It is our opinion that a yearly rental of $5 per acre, the amount named in the recommendation of the manager of the Waiakea Mill Company to his directors, is not excessive and is worthy of acceptance. We believe that the proposal to sell the release outright is also worthy of consideration.

ABSTRACT OF BOARD WORK.

First. Consultations with pilots, masters, and shipping agents.

Second. Consultations with Territory and city surveyors.

Third. Personal inspection of coast line and contiguous land for a distance of 7 to 8 miles on either side of Hilo.

Fourth. Personal inspection of coast by means of small boats; this in company with the pilot and harbor master.

Fifth. The incorporation of our information into the large working map.

LOCALITIES SELECTED FOR CLOSE STUDY.

First. Onomea Gulch, or Kahalii. (Referred to erroneously by Surg. D. A. Carmichael as Hali, or Kukuilauaniu, and marked on the maps as quarantine proposition No. 1.)

Second. Cocoanut Island, or proposition No. 2.

Third. Puhi, or proposition No. 3, accepted.

NOTE.—We were unable to locate any place with the name of "Hali," but it is certain that Kahalii, which is Hali with the prefix "Ka," is the place intended. We have not been able, however, to associate the name of Kukuilauaniu with Kahalii, nor can we obtain any information covering this locality. (Vide Exhibit B.)

COMPARISON OF LOCALITIES EXAMINED.

First. Onomea Gulch of Kahalii, or proposition No. 1, rejected.

ADVANTAGES.

First. Isolation (6 miles north of Hilo).

Second. Deep water near by, although declared by pilots and underwriters unsafe except for vessels under constant steam.

Third. An abundance of fresh water, although unavailable without considerable expense in development.

Fourth. Sewage problem simple and inexpensive.

DISADVANTAGES.

First. Acreage limited to about 13 acres, and this not particularly desirable on account of steep grades.

Second. Two pieces of land immediately joining the proposed area, and by right a part of it, owned by separate persons, who refuse sale.

Third. Inaccessibility, involving a long trip by water and a heavy and hilly road by land.

Fourth. Reported unsafe for landing of small boats in rough weather, a condition in that exposed locality extending through about one-third of the time.

Fifth. Unsafe for anchorage of vessels unless under constant steam.

Sixth. The long distance between it and the permanent anchorage of the disinfecting barge.

Seventh. Total ownership by private corporations and persons.

Cocoanut Island, or proposition No. 2, rejected.

ADVANTAGES.

First. A disinfecting wharf could be operated successfully.

Second. The water and drainage problem easy of solution, and attended with small expense.

Third. The land vested in the United States Government and not under lease.

DISADVANTAGES.

First. Its area is under 3 acres.

Second. It is located in the midst of the shipping.

Third. It is in close proximity to a number of dwellings.

Fourth. It would be difficult to guard.

Fifth. It has been used by the people of Hilo for bathing beach, and is the only public beach available.

Sixth. Public sentiment is strong and unanimous against its use as a quarantine station.

Puhi, or proposition No. 3, accepted.

ADVANTAGES.

First. Its state of isolation, combined with easy accessibility both by land and by water.

Second. The land vested in the United States Government, although under lease for seventeen years to the Waiakea Mill Company.

Third. The promise of the manager of the Waiakea Mill Company to recommend its immediate release under reasonable terms.

Fourth. Its constant safe landing for steam launch and small boats. (Vide evidence of pilots, Exhibit A.)

Fifth. Its temporary anchorage for large vessels in good weather.

Sixth. Its accessibility to the quarantine anchorage.

Seventh. The easy and inexpensive disposal there of the sewage problem.

Eighth. Its ample area in extent.

Ninth. Drinking water easily developed by shallow wells with windmill, or by use of rain water in storage tanks.

DISADVANTAGES.

The necessity of connecting with the city water supply by means of 1,000 feet 4-inch and 9,000 feet 3-inch iron water pipe, at an original cost of $4,000, should the two places for water development described above prove impracticable.

NOTE.—The development of water in any of the localities studied would be attended by some original expense. This would, however, be greater in the case of the site selected.

INCLOSURES WITH THIS REPORT.

1. Exhibit A.
2. Exhibit B.
3. Working map No. 1.
4. Map of Hilo and proposed quarantine site.
5. Photographs.
6. Map of Exhibit No. 1.
7. Proposal of Onomea Sugar Company for sale of lands at Kahalii; amount named, $———. (Vide memorandum.)
8. Proposal of Charles Furneaux for sale of lands at Kahalii.
9. Certificate of assessor and collector covering ownership of land at Kahalii.
10. Proposal of sublease from Waiakea Mill Company, covering selected site.

NOTE.—The proposal covering sale of lands at Kahalii is transmitted simply for your information, notwithstanding the rejection of that place as a quarantine site.

In conclusion, we have the honor to inform you that this board convened at 9 o'clock a. m. of May 9 and adjourned at 4 o'clock p. m. of May 16.

Respectfully,

L. E. COFER,
Passed Assistant Surgeon, U. S. Marine-Hospital Service, Chairman.
T. C. WINTER,
Deputy Collector of Customs, Member.

The SECRETARY OF THE TREASURY,
Washington, D. C.

PHILIPPINE ISLANDS.

DETAIL OF CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS.

On October 17, 1900, the medical officer in command, Marine-Hospital Service, Manila, P. I., was detailed by the honorable the Secretary of the Treasury chief quarantine officer for the Philippine Islands, under the terms of Executive order of October 10, 1900, copy of which follows.

[Executive order.]

EXECUTIVE MANSION,
Washington, D. C., October 10, 1900.

On and after October 15, 1900, there shall be detailed on the staff of the military governor of the islands of the Philippine Archipelago, as chief of the quarantine service established by Executive order of January 3, 1900, a commissioned officer of the Marine-Hospital Service, who shall, on the first day of each month, or at such other periods as may be directed by the military governor, submit to the military governor a detailed estimate of the quarantine expenses of the said islands of the Philippine Archipelago. After the approval of such estimate by the military governor the chief quarantine officer shall make requisition for the funds required in favor of the disbursing officer or agent of the Treasury Department, who shall pay the bills and vouchers on account of the quarantine service upon the certificate of an officer detailed under Executive order of January 3, 1900 (said order being still in force except as herein amended), and after approval by the chief quarantine officer. The disbursing officer or agent shall be appointed by the Secretary of the Treasury as soon as practicable, and shall render his accounts of such disbursements in accordance with the rules and instructions to carry into effect the Executive order of May 8, 1899, relative to the military government of the United States in the islands of the Philippine Archipelago during the maintenance of such government.

WILLIAM MCKINLEY.

LIST OF QUARANTINE STATIONS.

Quarantine is now conducted at the ports of Manila, Cebu, and Iloilo, P. I., under commissioned officers of the Marine-Hospital Service. As will be seen from the annual report of the chief quarantine officer, the quarantine station at Manila is now one of the most active stations in the Service. Extensive repairs and improvements have been made at the Mariveles Quarantine Station, near Manila, and a commissioned officer of the Service is there stationed. Vessels requiring disinfection are remanded from Manila to Mariveles for such treatment.

REPORT FROM MANILA AND SUBPORTS.

Report of Transactions at the Port of Manila and the Subports of the Philippine Islands during the Fiscal Year ended June 30, 1901; also Supplemental Report of Transactions from July 1, 1901, to September 15, 1901, inclusive.

By P. A. Surg. J. C. Perry.

Office Chief Quarantine Officer for the Philippine Islands,
Marine-Hospital Service,
Manila, P. I., July 25, 1901.

Sir: I have the honor to hereby submit report of the quarantine service in the Philippine Islands for the fiscal year ended June 30, 1901, and in doing so the data embodied in my supplemental report for period ended September 15, 1900, is included, as it is considered best to give the complete transactions for the entire year in this report.

During the period embraced herein much has been accomplished—the quarantine work has been placed on a rational and scientific basis; the Mariveles station for detention and disinfection of vessels practically completed and equipped; and a vast amount of disinfection of baggage has been done. In the performance of the quarantine work I have had the cooperation and support of the military authorities in the islands, and no friction has occurred to mar the accomplishment of scientific quarantine, the prevention of contagious and infectious diseases.

During the year the urgent need of a properly equipped station has been manifested on several occasions, and the excessive amount of work has taxed the resources of the limited force at this station to their utmost capacity. However, the work has been accomplished without delay, and to-day the quarantine service in the Philippine Islands is universally respected and recognized as of paramount importance.

It is deemed preferable to give the quarantine work accomplished, as well as the disbursements made, in tabulated form, and to briefly narrate that incident to equipping the Mariveles station and other matters pertinent to the general service.

Although the construction of the wharves, contract for which was awarded in June, 1900, was much delayed by unforeseen circumstances, they have been completed. This structure consists of a main wharf 400 feet long and 45 feet wide; piling and decking for detention room for steerage passengers, 108 feet long and 38 feet wide; that for bath house for steerage passengers, 128 feet long and 38 feet wide; and bath house for cabin passengers, 110 feet long and 36 feet wide.

All the piles, caps, stringers, and decking are of the best Philippine hard lumber, and the wharves should be serviceable for many years. The depth of water at low tide at any part of the front of the main wharf is 25 feet, and at ordinary tides there will be 30 feet where the keel of the vessel will rest, thereby enabling vessels of large size to come directly alongside for disinfection of ship, cargo, and passengers, saving much time and expense and reducing the interference with commerce to a minimum. The cost was $64,500.

Six new buildings have also been constructed during the year: Disinfecting shed, 150 feet long and 28 feet wide; detention room for steerage passengers, 108 feet long and 38 feet wide; bath house for steerage passengers, 128 feet long and 38 feet wide, and bath house for cabin passengers, 110 feet long and 36 feet wide. These four buildings have been erected on the wharves. The other two buildings have been constructed on shore, and are additional barracks for steerage passengers, 100 feet long and 40 feet wide, and quarters for attendants, 70 feet long and 24 feet wide. The cost of the six buildings was $38,900.

In addition to the above, a house for the installation of the electric-light plant has been built at a cost of $1,000; small house for keeping valuables of steerage passengers while taking bath, $400; tank of 2,000 gallons' capacity and tower for the same, $550; racks for fire hose, twelve lamp posts, shelving in storeroom, and four closets (one for each barracks and hospital) for the safe-keeping of the dishes and cooking utensils apportioned each building, and seven ladders, $200.

Extensive repairs have been made to the old buildings and the same painted at a cost of $4,900, and fences around and across the reservation have been constructed at a cost of $2,210.98.

A sewer, with modern plumbing in all the buildings, has been constructed at a cost of $5,675, and an electric-light plant at a cost of $8,000 has been authorized, but has not yet been installed, as the dynamo and fixtures had to be imported from the United States.

The Mariveles station is practically completed at date of writing, and will be opened with a medical officer and corps of attendants as soon as practicable. It is equipped to disinfect ships, cargoes, and passengers expeditiously, and provides accommodations for 800 steerage and 30 cabin passengers. The arrangement is such that the former can be segregated in six isolation groups, with cooking, bathing, and toilet facilities for each.

In this connection I wish to state that the accommodation for cabin passengers is inadequate, and the building utilized for barracks for this class is not well suited for the purpose, as it is divided into only four rooms of moderate size. I can not too forcibly recommend the construction of the building designed for the complete equipment of this station, and which was not built during the year on account of the cost of construction. Nearly all the complaints and criticisms relative to quarantine detention come from this class of passengers, and it is only fair and just to provide them with adequate accommodations, thereby minimizing the cause for complaint.

Further on, under a separate heading, I more fully describe the Mariveles station in order to show more clearly the adaptability of the different buildings for the purpose they are to serve, and I think it will be readily seen that the station has been modeled on scientific plans and will bear the test of intelligent criticism.

A suitable hulk for installation of a floating plant at Cebu has been secured and will be equipped as soon as the necessary apparatus has been received from the United States. As yet no hulk has been obtained for Iloilo, but no doubt one will be secured in the near future, and both of these stations will be provided with floating plants as soon as practicable.

Relative to the quarantine work proper performed during the period embraced by this report I have deemed it advisable to present it in tabulated form, that at Manila being shown by Exhibit A and at Cebu and Iloilo by Exhibits B and C, respectively.

In July, 1900, disinfection of all baggage carried on army transports to United States ports was commenced, and as an evidence of the efficacy of this procedure I will cite that since that time only one transport has been subject to quarantine on account of contagious disease.

On October 1, 1900, the plague epidemics in Hongkong and Amoy, China, having subsided, the prohibitive regulations against steerage passengers from those ports, instituted on May 1 of the same year, were removed.

On December 8, 1900, advices having been received of the existence of cholera in Singapore, the United States consul-general at that place was requested to enforce the United States quarantine laws and regulations relative to ships sailing from cholera-infected ports.

The regulations enforced and demanded by this port were: (1) Not allowing the crews of vessels on shore in Singapore; (2) prohibition of steerage passengers unless disinfected at port of departure; (3) certification of cabin passengers by the United States consular surgeon; (4) examination of the personnel of ships immediately prior to sailing; (5) the absolute prohibition of the shipment of old gunnies, food products, and other articles liable to convey infection.

These regulations remained in force during the existence of cholera in Singapore, and the United States consul at that port rendered material assistance in requiring the steamship companies to observe them. However, it was necessary to prohibit the landing of several thousand bales of old gunnies.

On January 1, 1901, general orders, submitted below, and issued at the request of this office, became effective, and boats engaged in the coasting trade and sailing between interisland ports were not required to secure bills of health.

General Orders, No. 166.

Office of U. S. Military Governor in the Philippine Islands,
Manila, P. I., December 18, 1900.

On and after January 1, 1901, the following regulations will govern in the issuing of bills of health in the Philippine Islands:

Any vessel leaving from any port in the Philippine Islands for ports in the United States or its dependencies shall obtain a bill of health from the quarantine officer, when such officer is on duty, and at ports where no quarantine officer is detailed, from the collector of customs or other designated officer.

Vessels bound for foreign ports may, upon application, obtain bills of health under the same regulations as vessels bound for ports in the United States or its dependencies.

Vessels engaged in the coasting trade of the Philippine Islands do not require bills of health; provided, however, that when ports become infected with a quarantinable disease bills of health shall be issued to all vessels sailing from such ports under the same regulations as those governing at ports of entry for vessels sailing to United States ports.

All bills of health for ports in the United States or its dependencies will be issued on Form 1931A, and for foreign ports on Form 1931FB, U. S. Marine-Hospital Service. Blank forms will be supplied by the chief quarantine officer for the Philippine Islands to all ports of entry, and at other ports upon requisition duly made by the inspector of customs.

By command of Major-General MacArthur:

E. H. Crowder,
Lieutenant-Colonel, Thirty-ninth Infantry, U. S. Volunteers, Secretary.

When plague and smallpox began to increase in Manila in the spring it was deemed advisable to institute an "outgoing" quarantine in order to furnish as much protection as possible to the other island ports against the introduction of these diseases, especially the former. This went into effect on April 1, promulgated by the following circular letter, and is still in force:

[Circular letter.]

Office Chief Quarantine Officer for the Philippine Islands,
Marine-Hospital Service, *Manila, P. I., March 27, 1901.*

To ship owners and agents, Manila, P. I.

Dear Sirs: In view of the increase of plague in Manila, and in order to protect other ports in the Philippines from the introduction of the disease, as well as to lessen the danger to vessels of infection and the liability to quarantine, all vessels leaving Manila for other island ports will be required to conform to the following regulations:

All vessels will be required to secure bills of health before sailing, and this will only be issued after an examination of the crew and passengers, and no passengers will be allowed to embark after this inspection.

Any passengers found sick on inspection will not be allowed to sail on that trip.

All passengers, with their baggage, and crew must be on board three hours before that fixed for sailing.

This office must be notified three hours before that fixed for sailing of vessel, so as to afford ample time for inspection and disinfection of baggage and allow the vessel to leave on schedule time.

You will notify all deck passengers that their baggage will be disinfected on board vessel, and that no mattresses or pillows can be taken. After this disinfection the captain of the ship must take charge of the baggage and see that it is kept closed for twenty-four hours or until the end of the passengers' voyage, in case this is less than twenty-four hours.

This regulation will go into effect on April 1, 1901, and continue until further notice.

Thanking you for your cooperation,

Respectfully,

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

All vessels, their crews, and passengers are inspected prior to sailing from this port. The baggage of all Chinese and native passengers is disinfected, and bedding, such as mattresses and pillows, is not allowed to be taken, as these articles can not be properly disinfected. This procedure has proved wise, as it prevents those actually sick from leaving the city to infect the vessels and other ports, and several persons affected with contagious diseases have been apprehended. This quarantine has progressed without friction, with little delay to shipping or inconvenience to passengers.

On the same date vaccination of all crews and passengers of incoming boats was instituted, and outgoing mail for the United States and island ports was required to be disinfected. The labor for the latter was furnished by the post-office authorities and the apparatus and disinfectants by this office, the work being performed according to my directions.

The amount of outgoing quarantine work performed is submitted in Exhibit A.

On May 1, 1901, owing to the marked increase of plague in Hongkong and Amoy, the same prohibitive regulations against steerage passengers from those places as was enforced in the preceding year were placed in effect and still remain in force. A conference with the different steamship agents was held and the necessity of not bringing any Chinese and native steerage passengers from those ports during the prevalence of plague was demonstrated, as it would render their ships liable to infection from the disease and subject their vessels to quarantine detention at this port. This regulation has proved very satisfactory both to the agents and to this office, and has been rigidly enforced, with the assistance of Asst. Surg. J. W. Kerr, U. S. Marine-Hospital Service, in Hongkong. In addition, the crews of these vessels are not allowed on shore in Hongkong, and they and their effects are disinfected each trip immediately prior to sailing. Disinfection of the through steerage passengers for Australian ports is also required. I think these regulations afford the best protection to the Philippine ports under the circumstances, and their effectiveness has been demonstrated by the fact that no infected ship arrived from the ports mentioned during the past or present year.

So few foreign vessels arrive at Zamboanga, Siassi, and Jolo, the other ports of entry, that it has not been deemed necessary to detail officers for duty at those places, but the inspection work is performed by the army surgeons stationed there.

In my opinion it is not necessary to install disinfecting plants at these ports, as infected vessels can be remanded to either Cebu or Iloilo.

An examination of Exhibit D, giving the expenditures for the year, will show that the running expenses of the Service have been small, and notwithstanding the large amount of construction and equipment only a little more than one-half of the available appropriation has been expended. However, this amount, $160,598.93, does not accurately represent the total sum, as several bills for supplies purchased in the United States have not yet been paid.

Exhibit A.

Statistics of quarantine transactions at the port of Manila, P. I., for the fiscal year ended June 30, 1901.

Month.	Vessels inspected.		Crew inspected.	Passengers inspected.	Crew vaccinated.	Passengers vaccinated.	Bills of health issued.
	From foreign ports	From domestic ports.					
1900.							
July	44	190	7,767	5,001	....	....	200
August	57	119	7,041	4,298	....	....	155
September	54	146	7,415	10,160	....	....	182
October	58	237	10,101	17,003	....	....	256
November	48	196	7,285	9,223	....	....	214
December	56	193	7,285	10,391	....	....	243
1901							
January	57	249	10,183	11,691	....	....	47
February	62	215	9,574	12,150	15	60	49
March	61	293	12,086	22,651	940	1,020	61
April	50	284	10,597	16,932	2,222	2,401	308
May	62	290	11,327	22,200	423	2,951	366
June	59	219	9,618	12,042	144	1,831	265
Total	668	2,631	110,579	153,745	3,744	8,263	2,346

Statistics of quarantine transactions at the port of Manila, P. I., for the fiscal year ended June 30, 1901—Continued.

Month.	Vessels disinfected.	Vessels quarantined for observation.	Persons quarantined for observation.	Pieces of baggage disinfected.	Pieces of baggage inspected.	Persons bathed and disinfected.
1900.						
July			13			
August		1	16	670	473	
September			23	881	471	
October		7	31	2,332	1,028	
November		2	10	759	903	
December	1	1	27	1,039	1,127	
1901.						
January	1	1	67	3,773	1,954	61
February	1	2	63	3,579	1,313	61
March		3	2	6,018	4,129	
April	1		30	2,984	763	30
May				7,013	2,084	
June	1	2	68	3,329	1,256	
Total	5	19	350	32,377	15,501	152

Statistics of outgoing quarantine, port of Manila, P. I., for the fiscal year ended June 30, 1901.

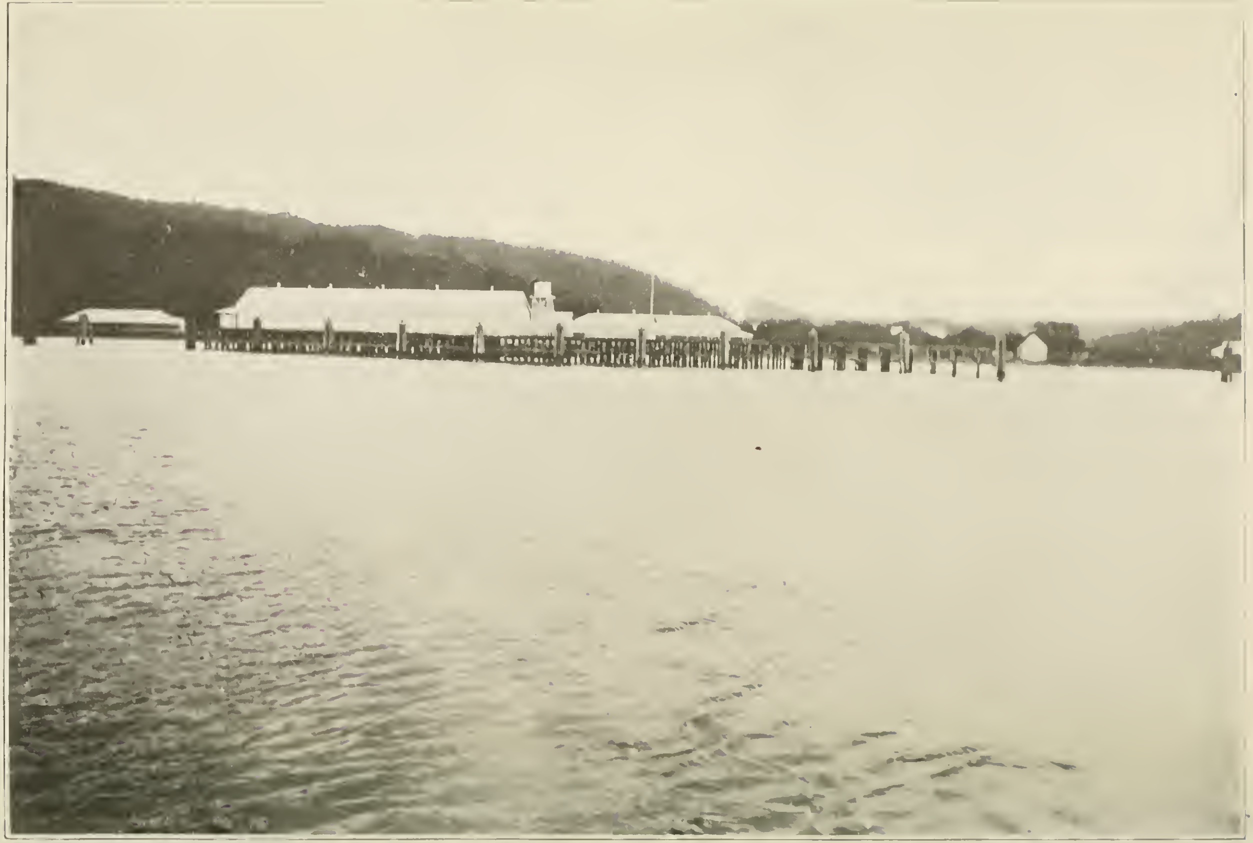
Month.	Vessels inspected.	Crew inspected.	Passengers inspected.	Ferry-boats inspected.	Crew of ferry-boats inspected.	Ferry passengers inspected.	Pieces of baggage disinfected.
April	257	5,411	4,962	232	2,464	25,858	3,512
May	317	6,448	5,953	374	3,427	44,229	3,763
June	206	5,355	4,260	276	3,009	34,179	3,763
Total	780	17,214	15,175	882	8,900	104,266	11,038

Month.	Rejections.	Causes of rejection.							Vessels disinfected.
		Smallpox.	Fever.	Scarlet fever.	Leprosy.	Plague.	Plague suspects.	Beriberi.	
April	11	3	6		1			1	1
May	15	7	4	1		1	2		
June	4	3					1		
Total	30	13	10	1	1	1	3	1	1

Number persons vaccinated, May	92
Number persons vaccinated, June	31
Total	123

Summary of quarantine transactions, port of Manila, P. I., during the fiscal year ended June 30, 1901.

Total bills of health issued	2,463
Total vessels inspected	4,963
Total vessels held in quarantine	20
Total vessels disinfected	6
Total pieces baggage disinfected	43,405
Total pieces baggage inspected and passed	15,501
Total crew inspected	127,781
Total passengers inspected	272,188
Total persons vaccinated	10,330
Total persons held in quarantine	290
Total persons bathed and disinfected	152
Total persons rejected (outgoing quarantine)	30



PHOTOGRAPH A.—MARIVELES QUARANTINE, PORT OF MANILA, P. I.

MARIVELES QUARANTINE STATION.

The Mariveles Quarantine Station, situated on the bay of the same name, is 30 miles from Manila and 6 miles from Corregidor.

Mariveles Bay is well protected by hills on three sides, and the water therein is usually smooth even when a typhoon is blowing. The entrance to the bay is about 1½ miles wide, free from dangers to vessels, and the depth of water at any portion is sufficient for vessels of the largest size. The bay is about 2 miles long and affords excellent anchorage for a large number of vessels.

The size of the wharf has already been described, but the photograph "A" gives a fair idea of this structure and the buildings on it as it appears from the front. The small house to the extreme left is one designed for keeping the money and other valuables of steerage passengers while taking bath, then follows in order, building 150 feet long and 28 feet wide, 100 feet of which is the disinfecting shed and the other 50 feet a storeroom for disinfectants; bichloride tank back of which is a small house for formaldehyde disinfection of trunks, etc., and boathouse to rear of wharf. There is 12 feet of free space in front of the building to give ample room for handling baggage, and a walk of 5 feet on the back between the disinfecting shed and the detention barracks and steerage bath house.

It will be readily seen that two boats can lie alongside the wharf for disinfection at the same time, and that a space 225 feet long and 45 feet wide exists for cargo, when it becomes necessary to disinfect this, thereby furnishing ample room and facilities for rapidly handling the same.

The arrangement of the detension barracks and bath houses for both cabin and steerage passengers is on what I believe to be a scientific plan, one that will insure quick and effective work, keeping absolutely separate the dirty and clean clothes and the passengers before and after their bath.

In this connection the method pursued in handling the steerage passenger, as well as the bathing arrangements for the cabin passengers, may be of interest.

The Chinese are taken from the vessel, and after opening their baggage, they are required to pass the small house and deposit their valuables. This room is fitted on the sides with 800 separate compartments which are similar to the small boxes in post-offices, the same being numbered consecutively; in each box is a large canvas check of the same number attached to a long loop of cord. The money, or other valuables, are taken and placed in the boxes commencing with the lowest number, and the corresponding check is placed around the passenger's neck, which he is to wear continuously until either returning on board the steamer or going into quarantine for detention. A small window and guard rail exist so as to prevent crowding, and the passengers are passed in a continuous stream into the detention barracks a few feet distant.

This plan has proven most satisfactory in my experience for taking care of the money that these passengers usually have in the clothes they wear, as in the process of disinfection this is either lost or they claim it has been stolen by the attendants of the station. I have tried several schemes, and the one outlined gives better satisfaction than any other.

The detention barracks, already mentioned, is a building 108 feet long and 38 feet wide, inside measurement 100 by 30 feet, and is divided by a partition extending to the roof into two rooms 30 by 50 feet. One is used for the detention of steerage passengers before the bath and the other for their use after bathing. A building of this character is of prime importance at a station where large numbers of steerage passengers are disinfected, and in this climate an additional necessity exists for furnishing protection from the sun and rain. The passengers are kept in this building until they are either placed on board the ship or in the barracks on shore. Each room of this building is furnished with two water-closets, automatic flush urinals and sink, also faucets for securing water for drinking purposes.

From the detention barracks the passengers in groups of 50 are taken into the general undressing room of the steerage bath house. Each passenger is given a coarse meshed bag corresponding in number to the check around his neck in which he must place his body clothing, except shoes and cap. The passengers are then passed into the general bathroon constructed with tile floor and equipped with 50 shower baths. After the bath they go into the general dressing room, are provided with a suit of station clothes and then go to the clean end of the detention barracks.

After the disinfection of their clothes it is a simple matter to give each one what belongs to him, simply mustering them with number of check exposed and giving bag of clothes of corresponding number. This procedure obviates the wild scramble over a pile of clothing heaped in the middle of the room and saves much valuable time and annoyance. Anyone who has not tried this method can not appreciate its advantage over the old, especially at night.

As shown by plan there is also a series of 7 baths provided with undressing, bath, and dressing rooms in a separate part of the steerage bath building for the women of the steerage and second class. In connection therewith there is a separate waiting room for this class of passengers.

The bath house for cabin passengers is arranged with a general waiting room, a central hall, and a series of four bathrooms on each side. Each section consists of an undressing, bath, and dressing room, the entrance and removal of unclean clothes being from the hall and the exit on the piazza in each case. One side is used for ladies and the other for gentlemen. At the farther end of the building two waiting rooms are provided, for ladies and gentlemen separately, each being furnished with complete toilet facilities, including stationary washstands.

Photograph "B" gives a good view of the back of the buildings described above, the wharf, and relative position of the different buildings, enumerated as follows: 1, house for keeping money of passengers; 2, detention barracks; 3, steerage passengers' bath house; 4, disinfecting shed, and 5, cabin passengers' bath house.

Photograph "C," another view, shows quite accurately the relative position of the buildings to the stone approach extending from the shore to the main wharf.

Photograph "D" also shows the bath houses and gives a fair idea of the surface and length of the wharf.

Exhibit 3 shows on a small scale the plant as it now exists, the relative position of the buildings on shore and the location of the fences.

"A" is the hospital, which is divided into two wards and a central hall. This building is 100 feet long and 30 feet wide, and has a piazza 8 feet wide on the front and ends. It has the water-closets, dining room, and kitchen on the back, the latter two being distinct buildings with connecting porches. Each toilet room in connection with this building is equipped with one bath tub and shower bath, one water-closet and one stationary washstand. The wards have a capacity of 10 beds each, and it is intended to use one for those actually sick from contagious diseases and the other for those affected with illness of a suspicious nature.

Building marked "B" is barracks No. 1, and is 100 feet long and 40 feet wide. This is divided into four large rooms, central hall, and two narrow ones through the wings. This existed during the Spanish régime, and was much dilapidated, without a roof, and in need of extensive repairs. It has been rebuilt and should be serviceable for a number of years. The annex on the back—dining room, kitchen, toilet rooms, and small porch—are new construction.

"C" represents barracks No. 2, which is 100 feet long and 40 feet wide, with a piazza 8 feet wide extending along the front and ends. The building is divided into two large rooms, with a central hall 10 feet wide. This has only recently been comleted, and is admirably adapted for the accommodation of steerage passengers.

"L" is barracks No. 3, which has been rebuilt with the addition of porch, dining room, kitchen, and toilet rooms.

These three barracks just described are for the detention of steerage passengers and are equipped with 800 beds. The arrangement is such that the number in quarantine can be divided into six segregation groups with absolutely no communication with each other. The women can also be furnished quarters in rooms separate from the men.

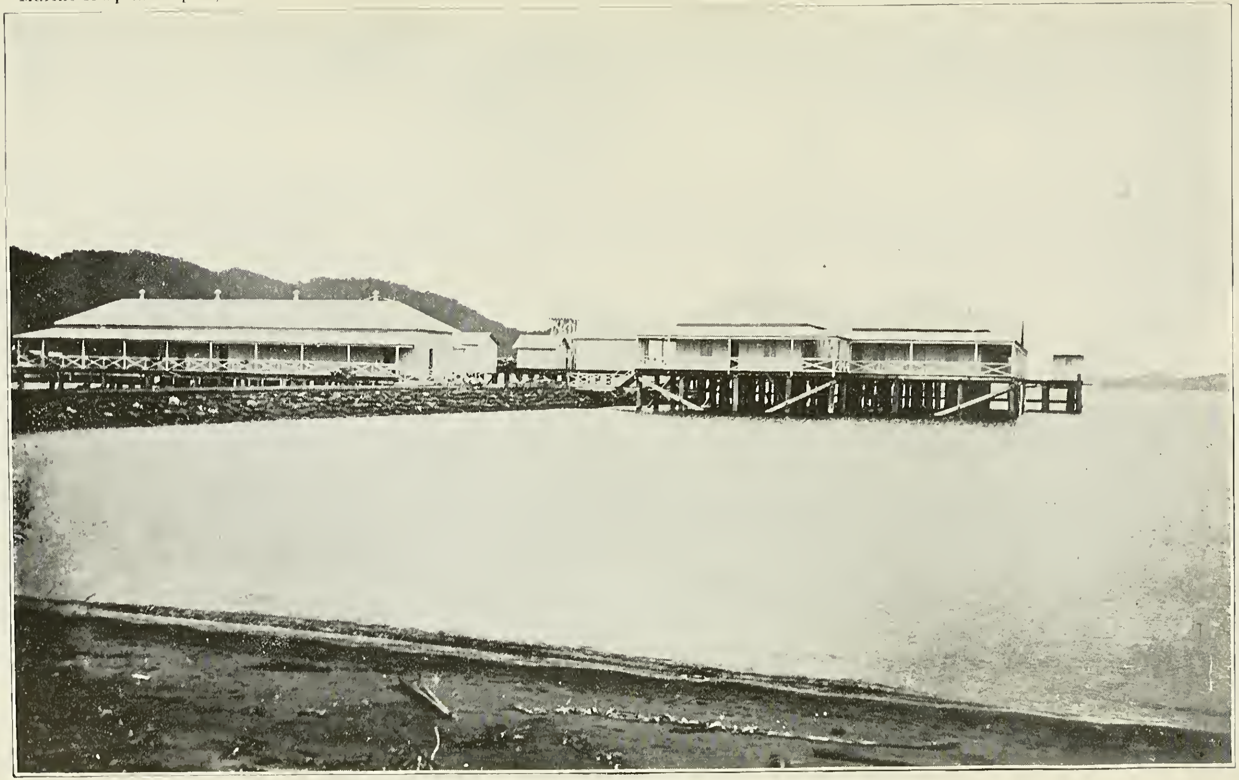
A glance at the plan shows that the arrangement of the cross fences will not permit contact of the different groups, and that one guard can supervise all the buildings and watch all persons in detention.

A group is segregated in the end of each building and ample toilet facilities have been provided.

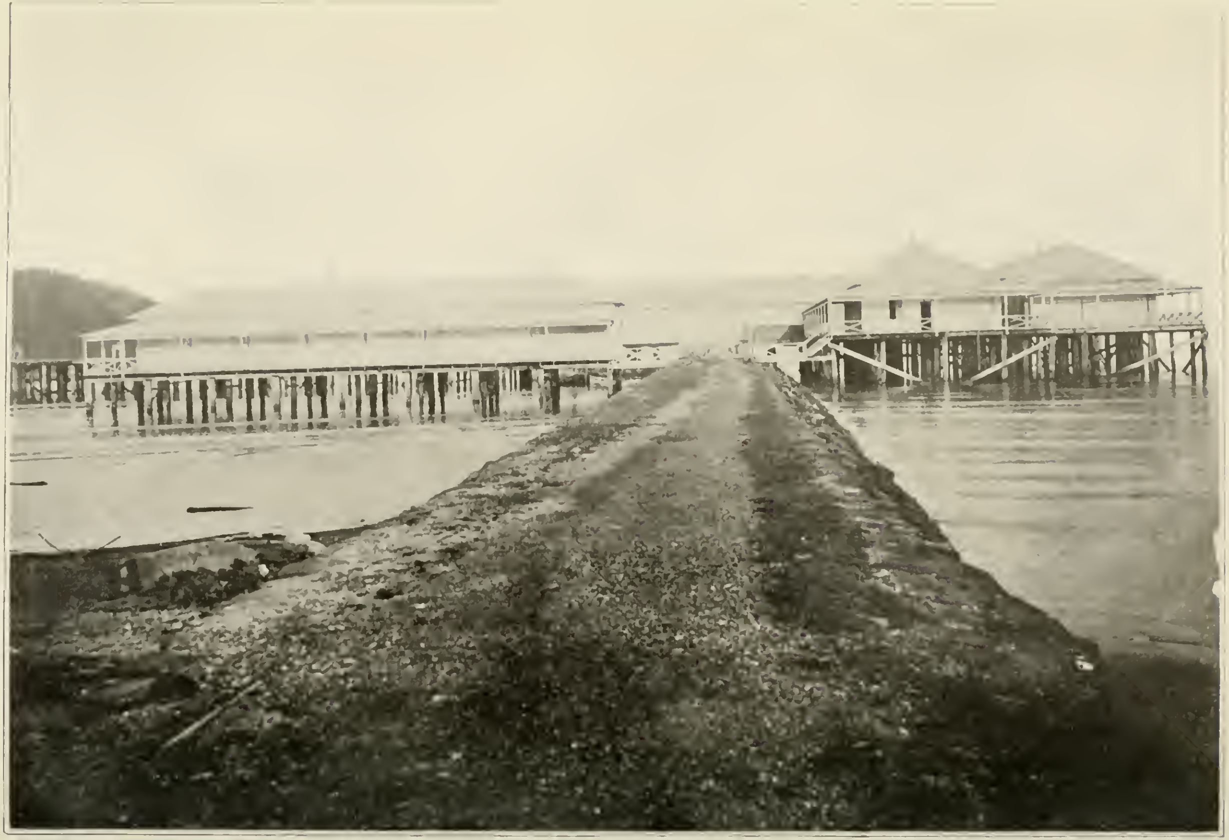
Each toilet room is furnished with three enameled-iron, automatic-flush water-closets, and a 3-foot enameled-iron urinal in one compartment and four shower baths in the other. All toilet rooms have tiled floors.

The small porch on the back of each building is divided into three compartments: A central one, connecting with covered passage to dining room and entered by door from hall of building, this for administrative purposes; two lateral ones, inclosed in lattice work, with doors opening into the central one. Door from ward or detention quarters enters this, and by this means the different groups are always kept separate and can receive their meals in the dining room at different times. So the only contact is that of dining in the same room as that in which the other group of the building have been fed. Each lateral section is equipped with six stationary, enameled-iron wash basins, thereby providing lavatories and means for securing water for drinking purposes.

All these buildings are constructed of hard lumber and well ventilated, the latter



PHOTOGRAPH B.—MARIVELES QUARANTINE, PORT OF MANILA, P. I.



PHOTOGRAPH C.—MARIVELES QUARANTINE, PORT OF MANILA, P. I.

in such a manner as to not only allow the escape of the hot air from the attic but also the removal of the foul air from the wards. These shafts can be closed when disinfection of the rooms is performed.

All kitchens have tiled floors and a large cooking range with hot and cold water, cooking utensils and dishes with locker for the same, so that everything apportioned to each building is kept separate and distinct.

Photograph "E" shows the hospital and barracks 1 and 2, while "F" gives a good view of the three barrack buildings for steerage passengers.

Referring again to Exhibit 3, "D" represents the location of the cabin passenger barracks to be erected during this fall. It will be a substantial building, two stories in height, and consist of 50 rooms with central and lateral halls. The length will be 148 feet and width 33 feet, inside measurements, and will have a porch 10 feet wide on the front and ends of the first story.

Building "E" is constructed of stone and was built when the Spaniards occupied the station. It is 60 feet long and 40 feet wide and divided into four rooms with a central hall. This is used as a detention barracks for cabin passengers and will accommodate 25 persons. As already mentioned, it is not well suited for this purpose, as the provisions afforded are inadequate. This building has been repaired, painted, and equipped with two lavatories containing six stationary washstands.

The small building "I," situated just to the rear, is 50 feet long and 14 feet wide. This is also of stone, and is divided by a partition into two rooms; one is equipped to serve as the kitchen for cabin passenger barracks and the other has been remodeled into two sections, furnishing toilet rooms for the cabin passengers, each of which is equipped with one enameled-iron bath tub, two shower baths, two water-closets, and two stationary washstands.

"F" represents the office building, 50 feet long and 20 feet wide, which is divided into a large front room and four small rooms in the other portion. The former will be used for office and the latter as quarters for the hospital steward.

The building "G" is of the same size as "E," and is divided into four large rooms. This is utilized for the medical officers' quarters.

The six buildings just described are all constructed of stone and formed part of the Spanish station. They have all been thoroughly repaired, painted, and refitted, and are now in excellent condition. The grounds in front of the three principal buildings are graded into walks and flower beds, and contain numerous trees and ornamental shrubs. A small pavilion exists in the center of the grounds.

The building "P" is of new construction and is the attendants' barracks. It is 70 feet long and 24 feet wide, divided into two compartments by a central hall, one of which is subdivided into six rooms for white and special Filipino attendants, and the other providing one large room for the ordinary employees. It is provided with stationary wash basins for both classes of attendants.

"U" represents the toilet room for the attendants, provided with two water-closets and two shower baths, furnishing toilet facilities for each class of employees.

The building "R" is for the electric-light plant.

Photograph "G" shows a section of the grounds and the type of the old stone buildings described above.

The water is piped by a 4-inch main from a reservoir in the mountains, 2½ miles distant. The supply is abundant and the pressure sufficient for fire purposes, being 90 pounds. Ample provisions have been made for fire purposes with six plugs on the grounds and five on the wharf and pier. One thousand feet of 2½-inch hose is distributed among the buildings to insure quick work in case of an emergency.

The sewer and plumbing is equipped with the best goods of American manufacture and the system is modern and scientific in every particular.

The electric-light plant in course of installation has a capacity of 450 lights and will furnish safe and efficient lighting for the station. Three arc lights will be located in the grounds and three on the wharf. The latter will enable disinfection of vessels at night, and it is the intention to do this work at night as well as during the day.

The buildings will be provided with incandescent lights of sufficient number.

But, as the running of a plant of this size will be expensive, it is contemplated using it only when ships or passengers are detained in quarantine and for the lighting of surgeons' and attendants' quarters and other buildings in constant use. During the time no active work is being performed it is proposed to install a Pelton water wheel and 40-light dynamo, at a cost of $800, to provide lighting. The water pressure is sufficient for operating this small plant, and no cost is incurred after its installation. This will be cheaper, safer, and more satisfactory than coal oil and lamps.

A watchman's electric clock with six stations is also soon to be installed at a cost of $300. The advantage of this is obvious.

With the completion of the cabin-passenger barracks and the electric-lighting system, I believe the Marine-Hospital Service will have in operation the best equipped quarantine station in the Orient, and one that will compare favorably with most in other countries.

Respectfully submitted.

J. C. Perry,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

The Surgeon-General U. S. Marine-Hospital Service.

Supplemental report.

Office Chief Quarantine Officer for Philippine Islands,
Marine-Hospital Service,
Manila, P. I., September 27, 1901.

Sir: I have the honor to herewith submit supplemental report of the quarantine service in the Philippine Islands for the period from July 1 to September 15, 1901.

The inspection of vessels is conducted at this station from 6 a. m. to 6 p. m., and during these hours all boats are boarded as soon as practicable after arrival. The crew and passengers are critically inspected.

All vessels are required to fly a yellow flag at the foremast upon entering the harbor and until the vessel has been inspected and given pratique.

No launches or lighters are allowed to come near the vessel until the quarantine officer has examined the ship. Little difficulty was experienced in instituting these regulations and they are universally respected and obeyed.

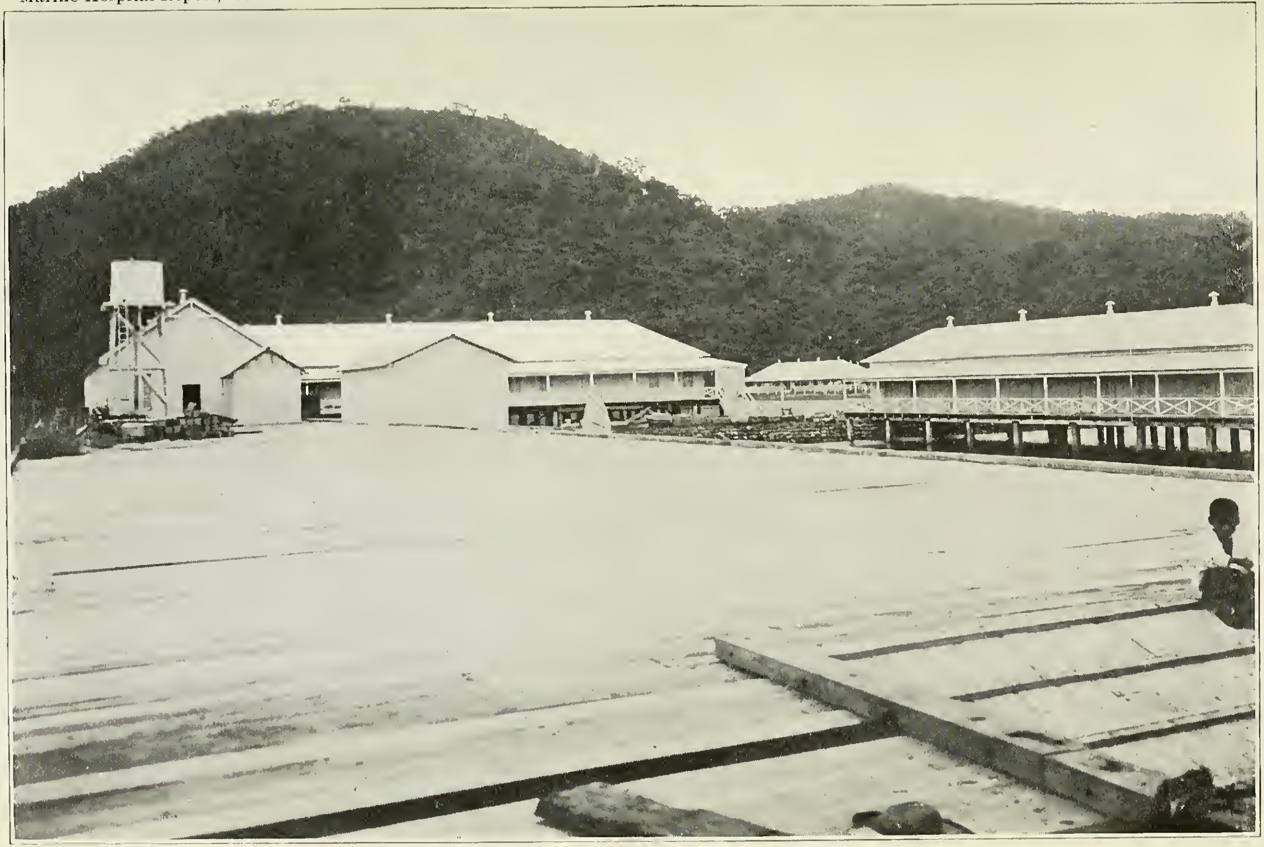
Vessels from Hongkong via Amoy and from Amoy direct are required to call at the Mariveles station for disinfection before coming up the bay to Manila, but with this exception the boarding is done in Manila Harbor, and if a ship is found infected the boat is remanded to Mariveles for disinfection and detention.

Nothing except the ordinary work of the station has occurred during the period covered by this supplemental report, and the transactions during this time are submitted below in tabulated form.

Statistics of quarantine transactions at the port of Manila, P. I., for the period from July 1 to September 15, 1901.

Month.	Vessels inspected.		Crew inspected.	Passengers inspected.	Crew vaccinated.	Passengers vaccinated.	Bills of health issued.
	From foreign ports.	From domestic ports.					
1901.							
July	56	201	9,634	8,916	54	1,589	282
August	52	173	9,601	7,808	23	963	212
September 1-15	17	88	3,792	1,930	12	361	117
Total	125	462	23,027	18,654	89	2,913	611

Month.	Vessels disinfected.	Vessels quarantined for observation.	Persons quarantined for observation.	Pieces of baggage disinfected.	Pieces of baggage inspected.	Persons bathed and disinfected.
1901.						
July	1	1	....	3,471	5,187	....
August	....	....	1	4,287	2,416	....
September 1-15	....	....	....	2,480	1,172	....
Total	1	1	1	10,238	8,775	....



PHOTOGRAPH D.—MARIVELES QUARANTINE, PORT OF MANILA, P. I.

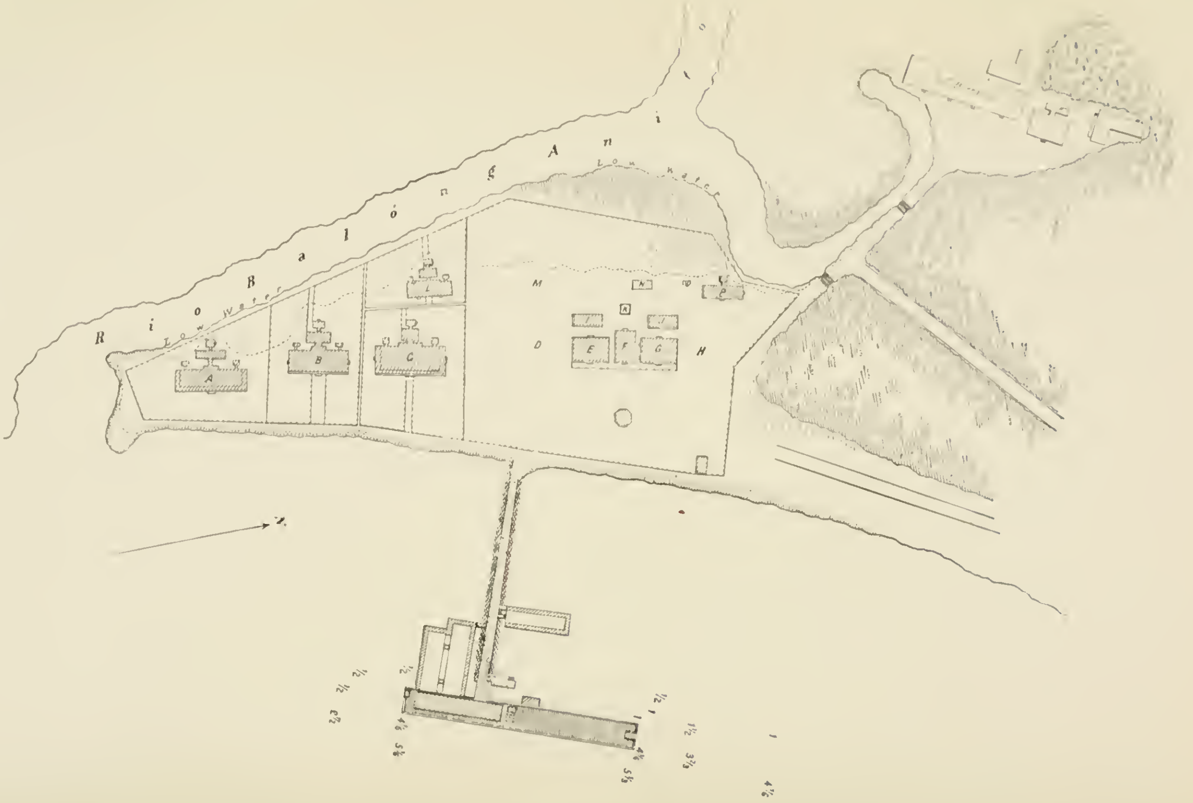


EXHIBIT NO. 3.—MARIVELES QUARANTINE STATION, PORT OF MANILA, P. I.

Statistics "outgoing quarantine."

Month.	Vessels inspected.	Crew inspected.	Passengers inspected.	Ferryboats inspected.	Ferryboats' passengers inspected.	Ferry crew inspected.	Pieces of baggage disinfected.	Number of rejections.	Causes of rejections.	
									Fever.	Plague suspects.
1901.										
July	223	5,448	3,867	338	31,625	3,510	1,575	8	6	2
August	164	5,707	3,697	366	30,216	4,001	1,100	3	2	1
September 1-15	98	2,646	2,248	177	14,658	2,037	578	1	1	....
Total	485	13,801	9,812	881	76,499	9,548	3,253	12	9	3

Summary of quarantine transactions, port of Manila, P. I., from July 1 to September 15, 1901.

Total bills of health issued	611
Total vessels inspected	1,953
Total vessels held in quarantine	1
Total vessels disinfected	1
Total pieces baggage disinfected	13,391
Total pieces baggage inspected and passed	8,775
Total crew inspected	46,446
Total passengers inspected	104,965
Total persons vaccinated	3,012
Total persons held in quarantine	1
Total persons rejected (outgoing quarantine)	12
Causes for rejection:	
Plague suspects	3
Fever	9

Quarantine transactions at the port of Cebu, P. I., from July 1 to September 15, 1901.

Month.	Vessels inspected—		Crew inspected.	Passengers inspected.		Bills of health issued.
	From foreign ports.	From domestic ports.		Cabin.	Steerage.	
1901.						
July	4	78	2,447	179	993	3
August	2	83	2,438	118	712	4
September 1-15	1	38	1,058	36	240	1
Total	7	199	5,943	333	1,945	8

Quarantine transactions at the port of Iloilo, P. I., from July 1 to September 15, 1901.

Month.	Vessels inspected—		Crew inspected.	Passengers inspected.		Bills of health issued.
	From foreign ports.	From domestic ports.		Cabin.	Steerage.	
1901.						
July	8	30	1,213	80	204	9
August	....	21	892	120	473	5
September 1-15	....	10	396	74	322	1
Total	8	61	2,501	274	999	15

Statement of public civil funds appropriated for the quarantine service in the Philippine Islands received and disbursed from July 1 to September 15, 1901.

DEBITS.

July 20. Received from treasurer Philippine Islands	$10,325.00
August 10. Received from treasurer Philippine Islands	10,000.00
September 13. Received from treasurer Philippine Islands	15,600.00
Total	35,925.00

CREDITS.

Disbursements:		
July—		
Pay rolls, officers and employees	$1,785.10	
Launch effects and supplies	351.93	
Office expenses	48.87	
Miscellaneous expenses	794.59	
August—		
Pay rolls, officers and employees	1,924.09	
Launch effects and supplies	354.32	
Office expenses	88.10	
Miscellaneous expenses	535.13	
Total credits		5,882.13
Balance in Hongkong and Shanghai Bank		30,042.87
Total		35,925.00

Respectfully submitted.

J. C. PERRY,
Passed Assistant Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Philippine Islands.

THE SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

JAPAN.

YOKOHAMA—DEATH OF ACTING ASSISTANT SURGEON ELDRIDGE.

During the fiscal year 1901 an acting assistant surgeon of the Service has been kept on duty in the office of the United States consul-general at the port of Yokohama, Japan, and another acting assistant surgeon at the port of Kobe, Japan, but owing to the death of Acting Asst. Surg. Stuart Eldridge, the officer at Yokohama, no report from that port was received.

KOBE.

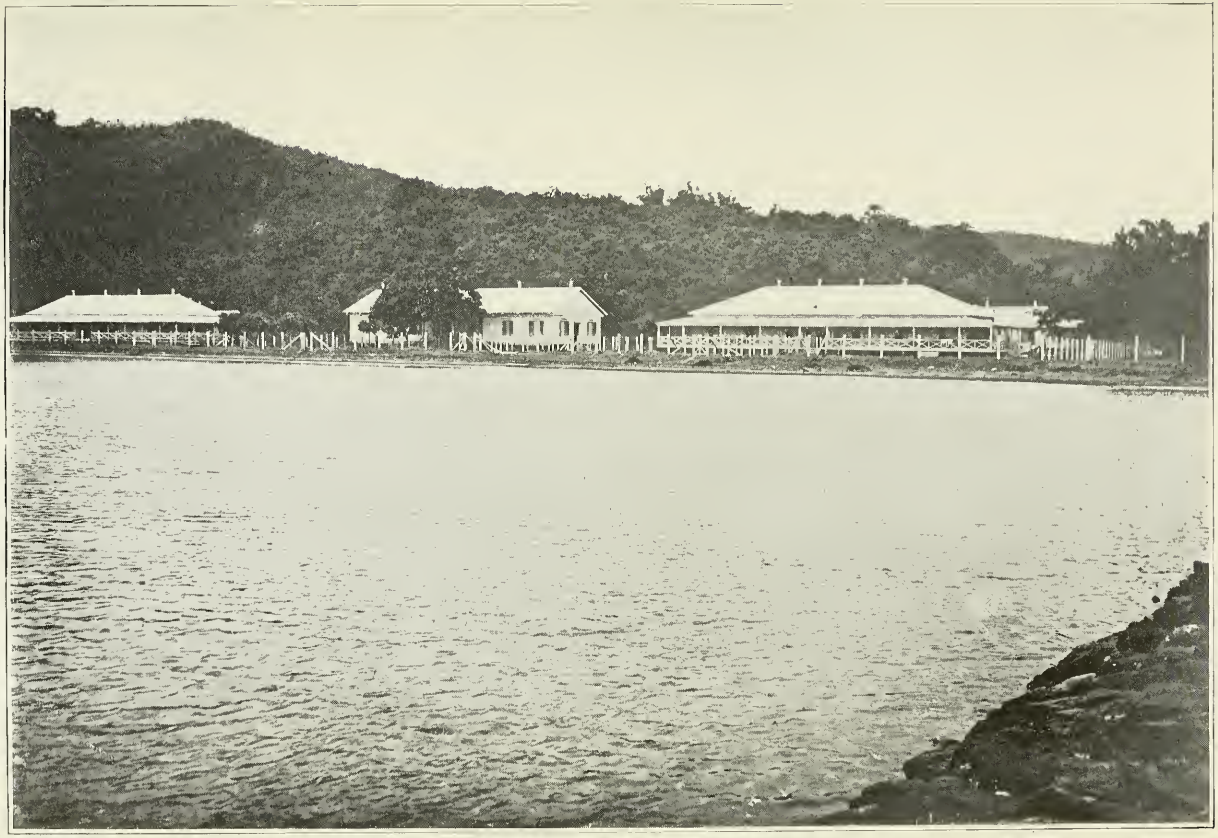
REPORT OF TRANSACTIONS AT THE PORT OF KOBE, JAPAN, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT OF TRANSACTIONS FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By Acting Asst. Surg. J. B. FOWLER.

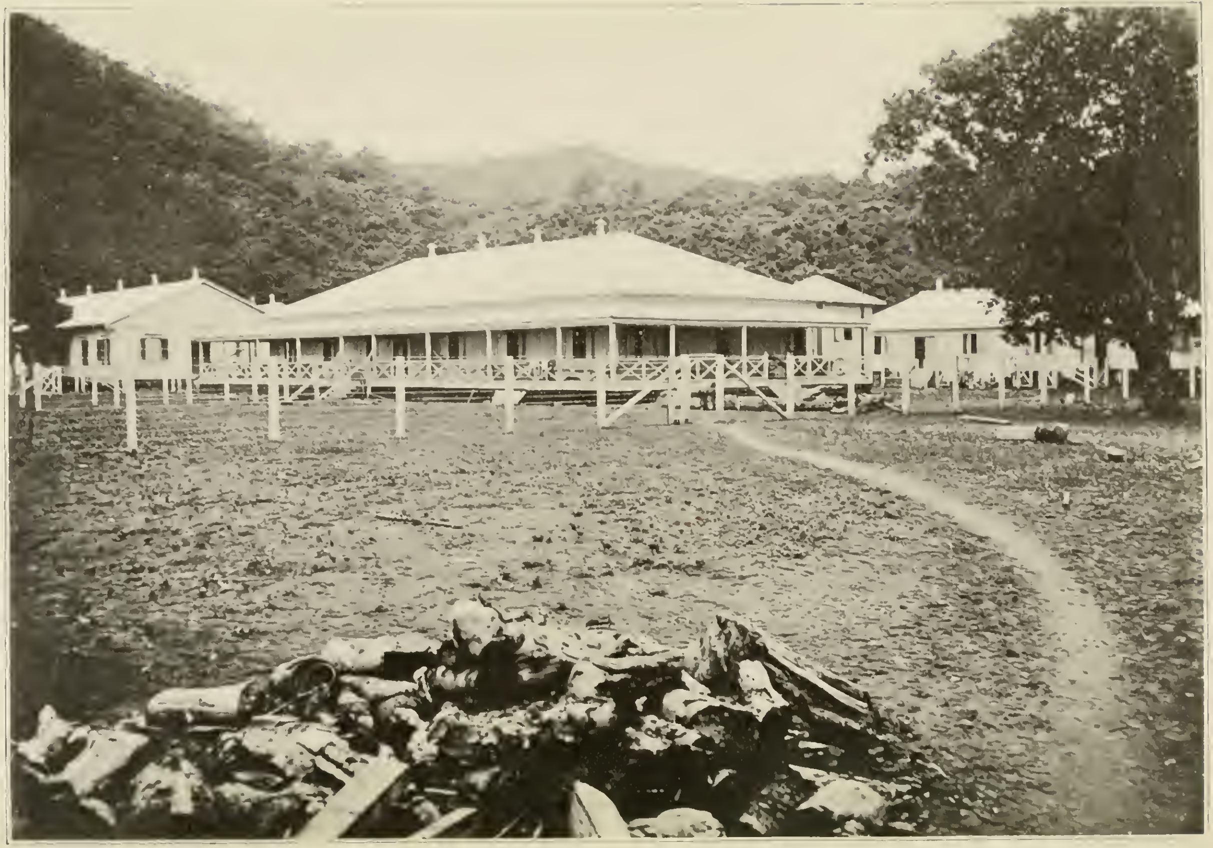
OFFICE SANITARY INSPECTOR,
U. S. MARINE-HOSPITAL SERVICE,
Kobe, Japan, October 19, 1901.

SIR: I have the honor to send in my report of the transactions at the port of Hiogo (Kobe), Japan, covering the period from September 16, 1900, to and including June 30, 1901.

I have officially inspected 180 vessels bound for ports in the United States and ports in the possession of the United States (as Manila), being an average of one every one and a half days.



PHOTOGRAPH E.—MARIVELES QUARANTINE, PORT OF MANILA, P. I.



PHOTOGRAPH F.—MARIVELES QUARANTINE, PORT OF MANILA P. I.

Of these ships, 26 were under the United States flag, 99 were British, 33 Japanese, 12 German, 8 Norwegian, 1 Danish, and 1 French.

Vessels bound to—	
Manila	45
San Francisco	39
New York	23
Tacoma	26
Seattle	15
Portland	16
San Diego	8
Port Townsend	1
Puget Sound	1
Port Angeles	1
Royal Roads	2
Farallone Islands	1
Sailing ships cleared for Honolulu direct	2
Total	180

The crews of these vessels amounted to 14,041, being an average of 78 men per ship.

Of the vessels inspected, 160 were steamers and 20 sailing ships, and of the steamers 61 carried steerage passengers, as follows:

Steerage passengers embarked here for United States	421
Steerage passengers for Manila	35
Steerage Chinese through from Hongkong	5,370

The number of steerage passengers, 5,826, added to the crews of all vessels inspected gives a total of 19,867 persons individually examined during this period of nine and a half months.

United States transports to Manila passed through Kobe	9
United States transports to San Francisco passed through Kobe	2

None of the emigrants or steerage passengers were vaccinated at Kobe previous to departure, in accordance with instructions received from Washington.

I use my own steam launch for boarding the said vessels.

All steerage passengers and emigrants whose port of departure is Kobe are also thoroughly examined by myself, the day before or the morning the vessel sails, at the houses of the two largest Japanese emigration companies, where, on their fitness being determined, their tickets are collected and taken to the United States consulate and are there officially stamped and then distributed to the emigrants on board ship, where they go through the usual inspection before mentioned.

PRESENT METHOD OF DISINFECTION OF BAGGAGE BY STEAM.

Temperature of steam at 4 atmospheres (14.6 pounds) equals 145.5° C. and 293.9° F. Boiler pressure equals 60 pounds.

The application of the steam.—An arched brick chamber having two iron doors, furnished with eight 4-inch steam pipes on either side wall, on which the full boiler pressure is left all the time. A second independent steam pipe passes below the trays, on which the baggage is spread out during disinfection, one on either side of the chamber, diameter 2 inches, and perforated with one-eighth inch holes, about 6 inches apart. These two pipes admit live steam of a temperature 293° F., which passes up through the baggage, driving the air out of the chamber through three 1-inch openings at a line where the arched brick roof of the chamber meets the side walls.

This live steam is admitted to the chamber for thirty minutes, when the valves are closed, the steam remaining on the large closed iron pipes above mentioned all the time.

The brick chamber is 12 feet wide, 30 feet long, and 10 feet high in the center. It is furnished with two iron discharging doors, one at either end, which are packed and held by means of screw bolts. A pressure gauge is attached to the pipes at the chamber as well as on the boiler. The chamber is always heated up before disinfection is commenced, resulting in a minimum condensation of steam on the walls and on the baggage, the moisture passing out with the air as it is displaced by the steam.

Time of disinfection, forty minutes from the time the doors are closed until opened. Live steam left on thirty minutes. Steam coils on side walls keep the chamber hot, dry out the baggage when the live steam is closed off, and heat the air and baggage while the latter is being spread out on the racks. These racks are 9 and 18 inches apart, admitting different sizes of packages. Ninety-nine per cent of Japanese baggage consists of telescoped willow bags, tied by means of rope.

The contents of these bags are divided between each half, which are labeled and kept together, and placed on the racks which extend on each side of the chamber, the center being open for a passageway between the doors.

Leather articles are disinfected with bichloride of mercury solution, 1 in 1,000.

Blankets are spread out.

The bags being of open straw work, the steam readily passes through the contents of the bags.

The number of pieces of baggage disinfected in this way was 409.

Dr. Boyer acts as inspector of the baggage fumigation.

The baggage is taken from the Japanese boarding house by coolies employed and under the supervision of Dr. Boyer to the disinfecting chamber the day before the vessel's departure. There, after undergoing the steam disinfection, it is stamped and then placed on board the steamer.

This period has been specially free from epidemics of sickness.

An outbreak of plague occurred in the town of Osaka the second week in September, 1900, when there were 13 cases and 13 deaths; in October, 15 cases, 9 deaths; in November, 22 cases, 17 deaths; in December, 8 cases, 7 deaths; making a total of 58 cases and 46 deaths. In Kobe and Hiogo, 3 cases and 1 death during the latter half of October, 1900. There has been no outbreak of plague in either place this year.

I am, sir, respectfully,

J. BUCKNILL FOWLER,
Acting Assistant Surgeon, Marine-Hospital Service, Sanitary Inspector, Kobe.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

OFFICE SANITARY INSPECTOR, U. S. MARINE-HOSPITAL SERVICE,
Kobe, Japan, October 26, 1901.

SIR: I have the honor to send in my supplemental report of the transactions at the port of Hiogo (Kobe), Japan, covering the period from July 1, 1901, to and including September 15, 1901.

I have officially inspected 54 vessels bound for ports in the United States and ports the possessions of the United States.

Of these ships, 12 were under the United States flag, 28 were British, 10 Japanese, 3 German, and 1 Belgian.

Three United States ships of war left here, 2 bound for Yokohama and 1 for Guam.

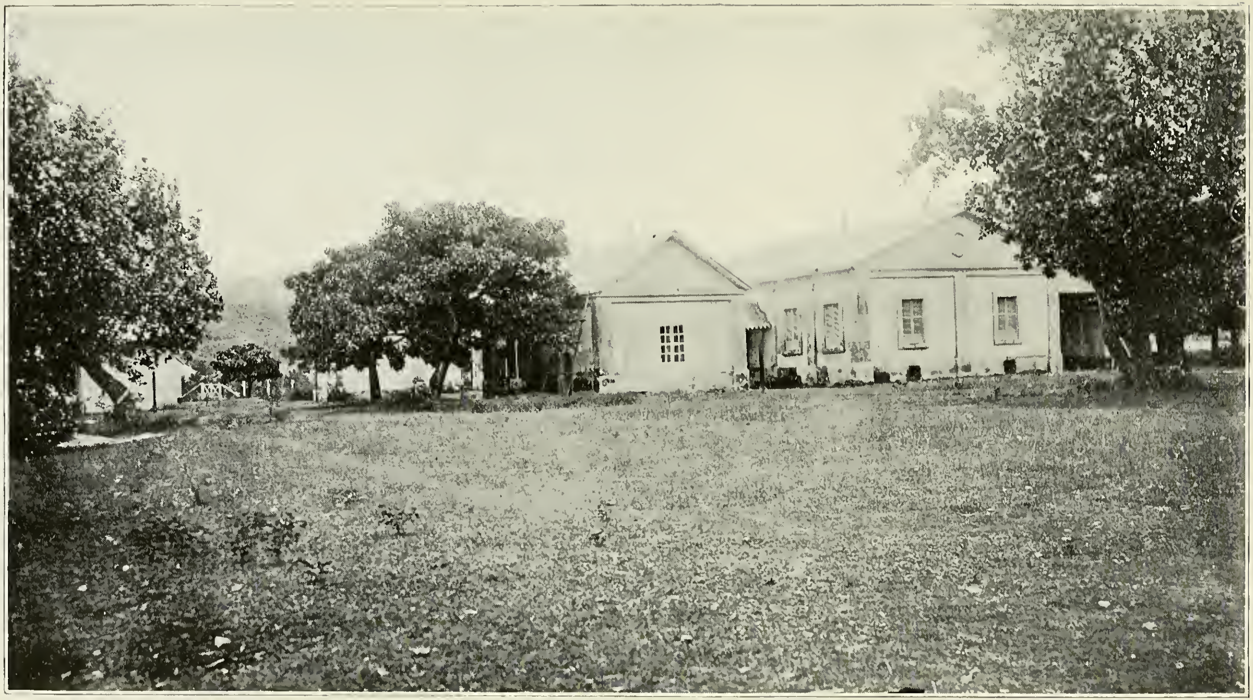
Their ports of destination were as follows:

Vessels bound to—	
Manila	12
San Francisco	10
New York	8
Tacoma	7
Seattle	8
Portland	5
Port Townsend	1
United States cruisers bound to—	
Yokohama	2
Guam	1
Total	54

The crews of these vessels amounted to 3,690, exclusive of those of the United States cruisers.

Of the vessels inspected, 48 were steamers and 6 sailing ships, and of the steamers 22 carried steerage passengers as follows:

Steerage passengers embarked here for the United States	179
Steerage passengers embarked here for Manila	5
Steerage Chinese through from Hongkong	1,602
Total	1,786



PHOTOGRAPH G.—MARIVELES QUARANTINE, PORT OF MANILA, P. I.

The number of steerage passengers, 1,786, added to the crews of all vessels inspected, 3,690, gives a total of 5,476 persons individually examined during the period of two and one-half months.

None of the emigrants or steerage passengers were vaccinated at Kobe prior to their departure, in accordance with instructions received from Washington.

The number of pieces of baggage disinfected for the period was 180.

There has been but one case of smallpox so far this year, and that ended in recovery.

I am, sir, respectfully,
J. Bucknill Fowler,
Acting Assistant Surgeon, Marine-Hospital Service,
U. S. Sanitary Inspector, Kobe.

The Surgeon-General U. S. Marine-Hospital Service.

China.

HONGKONG.

A medical officer of the Marine-Hospital Service has remained on duty in the office of the United States consul-general at Hongkong during the fiscal year 1901 for the purpose of inspecting vessels bound to the United States and of issuing bills of health to same in conjunction with the United States consul-general.

VISÉ OF FOOD PRODUCTS FROM NONINFECTED REGIONS.

On December 4, 1900, the medical officer on duty at Hongkong was directed to visé food products destined for America, provided they did not, to his personal knowledge, originate in an infected locality, and he was informed that if goods were shipped which he could not thus visé they would be subject to disinfection upon arrival in the United States. He was also instructed to note such shipments on the freight manifest for the information of the quarantine officer at the port of arrival.

VISÉ OF FREIGHT BOUND FOR HONOLULU.

On May 29, 1901, the chief quarantine officer for Hawaii requested that the medical officer on duty in Hongkong be directed to visé freight destined for Honolulu, and also to notify said chief quarantine officer of the suspected shipment of freight which might be considered doubtful from a sanitary standpoint. Instructions were issued to this effect June 6, 1901.

REPORT OF TRANSACTIONS.

Report of Transactions at the Port of Hongkong, China, during the Fiscal Year ended June 30, 1901; also Supplemental Report of Transactions from July 1 to September 15, 1901, inclusive.

By Asst. Surg. John W. Kerr.

Marine-Hospital Service,
Hongkong, China, September 2, 1901.

Sir: I have the honor to submit a report of transactions at this station from September 16, 1900, to and including June 30, 1901.

The following table shows the number of bills of health issued, the character of the vessel, destination, number of officers and crew, cabin and steerage passengers, and the number rejected for various causes.

Certificates of health were also given to three United States naval vessels at the request of the commanders and upon the certifiate of the medical officer aboard. Two of these vessels were destined to Canton and one to Shanghai, as will be seen in the table:

Destination.	Steam.	Sail.	Crew.	Cabin.	Steerage.	Rejected.
San Francisco	39	....	5,390	751	6,238	103
Puget Sound	36	9	2,869	74	696	26
Columbia River	14	8	504	7	19	2
San Diego, Cal	7	....	346	8	99	4
New York	33	5	1,223	6	....	6
Philippine Islands	200	1	13,592	2,028	5,682	89
Chesapeake Bay	1	1	54	....	....	....
Guam	....	1	11	1	....	....
Canton	2	....	331	....	....	....
Shanghai	1	....	176	....	....	....
Total	333	25	21.496	2,875	12,734	230

Thus it will be seen that 358 bills of health were issued, 355 of that number being inspected prior to sailing.

Inspection of steamers.—The last visit to the vessel prior to sailing, for the purpose of giving the bill of health, is made as near the sailing hour as possible, when the forecastles, steerage quarters, and the ship's papers are inspected, and the crew and steerage passengers are given a physical examination.

Every effort is made to detect elevation of temperature, as such cases have been regarded as suspicious and are not allowed to proceed on the voyage.

After May 1, 1901, all Asiatic steerage traffic to the Philippine Islands, on request of the chief quarantine officer of those islands, was prohibited because of the severe epidemic of plague in this port. Asiatics wishing to travel to the Philippine Islands as cabin passengers were required to present evidence that they really belonged to the class who usually travel as first-class passengers, and in addition were required to undergo certain restrictions, prior to embarkation, which would render them unlikely of carrying the infection of plague.

These passengers were in many cases required to reside for fifteen days in districts of the city considered noninfected, calling at this office from time to time until the departure of their steamer, when they were given the following certificate, without which it was impossible for them to secure passage. This requirement has been rigidly enforced throughout the epidemic, and in consequence has greatly increased the office work.

MARINE-HOSPITAL SERVICE,
OFFICE OF MEDICAL OFFICER IN COMMAND,
Hongkong, ——— —, 190—.

In my opinion ——— ———, bearing registry certificate No. ——, is at present free from quarantinable disease and may be accepted as a first cabin passenger to ——— ———, per steamship ——— ———, subject to medical inspection just prior to the hour of sailing.

——— ———,
Assistant Surgeon, Marine-Hospital Service.

From May 1 to June 30, 104 such certificates were issued and more than double that number were refused. The rejections only included the communicable diseases and cases of fever above 37.4° C., which were detained as probable sources of danger. Among the number rejected were two cases of leprosy.

As parasitic skin diseases, trachoma, tuberculosis, and beri-beri are common among Asiatic steerage passengers, it is to be regretted that this class of diseases, can not also be prevented from embarking until after complete recovery.

Inspection of cargo.—All classes of Chinese cargo have been inspected many times to render ourselves familiar with their character, and a routine inspection of cargo carried by certain lines has been made. Until information was received from the Bureau regarding the unlikelihood of certain Chinese food products carrying infection, the United States quarantine regulations were rigidly enforced against this class of freight, large quantities being prevented from going. The method by which this was done has been described in the weekly reports, and consisted in the inspection of all shipping orders prior to loading the eargo. The consular invoices were also viséed.

We have no facilities for boarding work, having to depend on company launches, which at times greatly retards the work. Considering the large number of visits necessary to steamers, as well as to the disinfecting hulk, which occurs almost daily, a launch should be at our disposal at all times for this purpose.

Disinfection of steamers.—Sulphur disinfection has been carried on by the various steamship companies at our suggestion, 12 steamers having been so certified on the bill of health. A number of other vessels were disinfected by the ship's officers, which was not noted on the bill of health, as we were unable, through lack of time, to observe the work.

The "pot method" was used in this work, and is rather crude, but, in view of the danger of the transmission of plague by means of rats, it seems a good precaution.

The U. S. army transport *Meade* was partially disinfected by the medical officer of the port because of a case of smallpox landed here, his method being practically that required by the United States quarantine regulations.

Disinfection of cargo.—Eleven thousand three hundred and thirty-three pounds of human hair were disinfected by steam during the time covered by this report.

An attempt was made to disinfect feathers, but the facilities were found entirely inadequate for the disinfection of such bulky, unmanageable cargo. Upon receiving authority from the Bureau, shippers were notified that this cargo might be shipped on sailing vessels where the voyage occupied more than sixty days, or on steamers after storing for sixty days in rat-proof lighters.

The disinfection of crews and steerage passengers.—Practically all vessels carrying Asiatics were required to observe this precaution. Two steamship lines plying between Japan and Australia, and calling at Manila to land cabin passengers, were the only ones not required to do so. This exception applied to steamers carrying non-Chinese crews, the stay in port being from twenty-four to forty-eight hours, during which time the crew and through steerage passengers were not allowed ashore. On ships carrying Chinese crews it is impossible for the officers to keep them aboard while in this port. From September 16, 1900, to June 30, 1901, 22,932 individuals were bathed and 28,455 bundles of clothing and bedding were disinfected at the company disinfection station.

Facilities for disinfection.—Several years ago the Pacific Mail Steamship Company, in order to comply with the requirements of the Hawaiian sanitary authorities, installed a disinfecting plant in their godown (warehouse). This consisted of one steam chamber, a boiler, a hot-water heater, and 18 bath tubs. Shortly after our arrival several of the shipping firms organized the "disinfecting bureau" by fitting up a hulk for this purpose. This plant was first used in November last, though just now completed, as it was impossible during the spring to obtain workmen, thousands having left the city to escape plague.

Upon finding that more efficient work could be done at this plant, because of its isolation from the city and nearness to the shipping, arrangements were made to transfer the Pacific Mail plant to the hulk. The advantages of this change were that it would be operated by regular employees, street coolies having been employed at the godown, and the practice of selling labels, which had been done by the Chinese at the godown, could be prevented.

The completed plant now consists, briefly, of one hulk, 591 tons, 180 feet long and 35 feet beam, cleared of all unnecessary houses and gear, and fitted with a between-deck, thus providing two decks of 4,204 square feet each. The large chamber (17 by 5 by 4 feet), fitted with a formaldehyde generator, is located on the upper deck, the remainder of the space on this deck being reserved for the handling of baggage. On the between-decks are located two boilers for supplying steam, one water heater, water tanks, the small chamber (12 feet long and 5 feet in diameter), and 100 bath tubs. The bathroom (45 by 26 feet) has a concrete floor, and can be divided into two apartments, by means of screens, for males and females. In addition we have two Kuhn formaldehyde generators provided by the Bureau.

Acting Assistant Surgeon Hough arrived February 22, 1901, and was detailed to superintend the disinfection.

The plant is operated by regular employees of the disinfecting bureau as follows: One captain, 1 engineer, 1 fireman, 1 boatswain, and 6 sailors. In addition an American is employed for policing and searching of baggage, and 1 Chinese, Lai Shung Yan, as interpreter, who also does inspection work and labels baggage under our immediate supervision. He has been in the employ of the company, at our suggestion, since its beginning, and deserves credit for his faithfulness and efficiency.

Quarantinable diseases.—Cholera was imported from Singapore by a Chinese immigrant steamer early in the year. Thirteen cases and 9 deaths occurred in quarantine, but no cases occurred ashore. It is unlikely that the disease would become epidemic in this city because of the excellent water supply.

Smallpox appeared in the early spring and reached epidemic proportions in March, 1901, declining rapidly with the advent of hot weather. The first reported case was imported from Swatow, but in all probability the infection came from Canton, as that city experienced a severe epidemic about that time. Vaccination was enforced on outgoing vessels (when vaccine virus was obtainable) until the last week of May, being discontinued at that time because of the oncoming plague epidemic. From January 1, 1901, to June 30, 89 cases and 57 deaths were reported in the colony. The disease still lingers, but attracts little attention except during epidemics.

Plague has prevailed more or less throughout the year, cases having been reported every week since January, 1901, excepting the week ending February 9, 1901. Early in April the cases rapidly increased and continued to do so until the last week of May, when the turning point was reached.

During the months of May and June 1,129 deaths were reported as due to this disease alone. The decline was gradual until the last week in July, when the cases fell from 15 and 20 a day to 1 and 2 a day, and at the date of writing very few cases are reported.

More septicæmic and pneumonic cases were seen at the beginning of the epidemic; the virulence was greater and the mortality higher than toward the end of the epidemic. The bacillus was easily demonstrable in most cases, though not commonly in the blood from the ear except in septicæmic types.

Dr. Thompson, colonial surgeon in charge of the epidemic hospital, stated that the presence of bacilli in the blood was a very grave prognostic sign. Local ulcers and blebs suggested themselves many times as the primary site of inoculation. Widespread hemorrhagic infiltration of the meso-sigmoid, peritoneum, and mesentery were particularly characteristic necropsy findings.

The epidemic attracted especial attention because of the relatively large number of Europeans attacked, though in them the disease was not so fatal.

The area of infection was widespread and the danger of transmission was great, as was evidenced by the number of steamers developing the disease in the harbor or after having left the port. Cases such as the steamship *Carlisle City*, which developed the disease several weeks after having left an infected port, point to rats as the mode of infection and suggest the most effective means of guarding against such instances by means of sulphur disinfection.

Beri-beri is always present and occasionally becomes epidemic in character. A limited epidemic recently developed among the employees of the Hongkong Godown Company.

Respectfully,

John W. Kerr,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

Supplemental report.

Marine-Hospital Service,
Hongkong, China, September 20, 1901.

Sir: I have the honor to submit a supplemental report of this station from July 1, 1901, to September 15, 1901.

The table given below indicates the number and character of vessel, crew, cabin and steerage passengers, and the number rejected for various causes during the time covered by this report.

During the year ending September 15, 1901, there were 441 bills of health issued. The total crews aboard these vessels amounted to 30,257; total cabin passengers, 3,484, and total steerage passengers, 15,007.

Destination.	Steam.	Sail.	Crew.	Cabin.	Steerage.	Rejected.
San Francisco	10	3	1,445	153	1,451	41
Puget Sound	14		1,076	26	275	7
Portland	3	2	240	4	17	
Philippine Islands	45		2,720	426	530	28
New York	6		280			
Total	78	5	5,761	609	2,273	76

During this period 6,453 baths were given at the disinfecting station; 8,654 bundles of clothing and bedding and 9,332 pounds of human hair were disinfected by steam. In addition five steamers were disinfected to kill rats, the pot method being used to burn the sulphur.

Asiatic steerage-passenger traffic to the Philippine Islands is still prohibited, and health certificates are still issued to Asiatics wishing to travel as first-cabin passengers; 130 such certificates have been issued since July 1, 1901.

The plague epidemic rapidly declined early in July, 180 deaths being reported during that month as against 572 from the same cause during June.

Less than 30 deaths were reported during August, showing that the epidemic is practically over for this year, although a few cases continue to occur.

Plague may be considered endemic in this city, and while there is less danger of transmitting the infection during the winter months, arrivals from this port should always be considered as from an infected port.

One case of smallpox was reported during the time covered by this report, which shows that the disease still lingers. The city itself is situated on the northern shore of the island, the buildings extending along the water front for a distance of 4½ miles, and up the hillsides for a distance of 600 feet above high-water mark. The European quarter occupies the central portion of the city and the peak, with thickly populated Chinese districts on either side. The city is divided into ten health districts in which are located 7,862 dwellings. An idea of the dense crowding may be formed when it is known that the population of the city is 126 per acre—"more than double the acreage population of the most densely populated large city of the British Isles." These conditions together with the character of the Chinese residents make it very difficult to effectually combat infectious diseases.

Respectfully,

John W. Kerr,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General U. S. Marine-Hospital Service.

Europe.

RECALL AND TRANSFER OF OFFICERS AT CERTAIN EUROPEAN PORTS.

The medical officer of the Marine-Hospital Service serving in the office of the United States consul-general, Berlin, Germany, was recalled April 5, 1901. The officer serving in the consul-general's office in Paris, France, was recalled April 11, 1901. The officer on duty in the United States consul-general's office, Vienna, Austria, was transferred to London September 1, 1900, and ordered to Liverpool, England, September 7, 1900. This officer inspected outgoing vessels and signed bills of health in conjunction with the consul, under the law approved February 15, 1893, until January 5, 1901, when he was relieved of this duty. On January 15, 1901, he was assigned to the duty of inspecting emigrants bound for Canadian ports, report of which work appears in another part of this volume. An officer has been continued on duty in the office of the United States consul-general, London, England, during the fiscal year 1901, with the exception of short tours of duty at several other ports.

PARIS.

Report of Transactions at Paris, France, from July 1, 1900, to April 11, 1901, inclusive.

By Asst. Surg. S. B. Grubbs.

Washington, D. C., *August 5, 1901.*

Sir: I have the honor to make the following report of my duties and transactions while stationed at the office of the United States consul-general at Paris, France.

This detail comprised the period between July 1, 1900, and April 11, 1901, during all of which time I remained in Paris, except between the dates of August 20 and September 20, 1900, when I was absent on official leave of one month.

The Bureau letter outlining my instructions stated: "It is expected that you will gain all possible information regarding the sources of the emigrants and the methods of their collection and shipment to the seaports for transshipment to the United States. The Bureau desires especially to know whether quarantinable diseases prevail in the regions where the emigrants are collected, and the methods pursued by the Government officials and by the representatives of the steamship lines in the medical examination of the same. You will keep posted on the development and progress of any epidemic disease in Europe or the Far East. By keeping in touch with the bacteriological laboratories of your city you will also gain valuable information."

These instructions left me considerable discretionary power as to what I should do, and it seemed to me that in the absence of bubonic plague at any point in France, I should quietly establish such a position as would enable me to act upon the first rumors of an epidemic, in order to furnish the Bureau with accurate information and to put into immediate effect such precautionary measures in regard to travel to the United States as the Bureau might order.

After reporting to United States Consul-General John K. Gowdy, by whom I was most cordially received, I was, by the courtesy of Special Agent Williams, chief of the European office of the United States Treasury Department, allowed to establish myself at a desk in his office adjoining the consulate. I soon after paid my respects to the United State ambassador, and was kindly offered any assistance in his power.

I was successful in establishing very pleasant relations with the director of charities and public health, under whose department comes all the quarantine and epidemic service of France, with the inspector-general of the sanitary service, with the chief of the bureau of statistics, and others. I also made the acquaintance of the heads of the various trans-Atlantic steamship lines, nearly all of whom have offices in Paris. This, supplemented with the offices I had visited in Havre, Boulogne, and Marseille, gave me very ready means of investigating the movements of emigrants. Among my other associations on whom I counted for information were those with the newspaper fraternity. Besides the French news agencies, the Associated Press, and several American papers published regularly in Paris, many papers maintain special correspondents there. My pleasant relations with these gentlemen allowed me to speedily investigate rumors that frequently arose. It was my privilege to report to the Bureau the exact source and reliability of some news articles from Paris on the subject of plague.

After becoming thus established I endeavored to follow the instructions of the Bureau in regard to furnishing information. To this end two reports were sent weekly, one giving all the news of epidemics, both in France and without, that it was possible to obtain, as well as the precautions taken by the French authorities against these diseases, and a second giving general items of sanitary interest, especially the report of scientific advances made at the various institutions, many of which I visited regularly.

In addition to these reports and several translations of articles I thought might interest the Bureau I was able to send in special reports on the following subjects: "The sterilization of potable water, (1) by chloric peroxide, (2) by ozone." (Published in Public Health Reports, Vol. XV, No. 44.) "The present special precautions taken at the various ports of France against the introduction of bubonic plague." "The disinfecting apparatus exhibited in the section of hygiene at the Paris Exposition." (Published in Public Health Reports, Vol. XVI, No. 9.) "Emigration through France to the United States." (Published in Public Health Reports, Vol. XV, No. 50.) "The municipal disinfecting service of the city of Paris." (Published in Public Health Reports, Vol. XV, No. 49.) "Review of French literature of the past four years on the subject of disinfection by formic aldehyde gas." (Published in Public Health Reports, Vol. XVI, No. 9.) "Influenza or grip in Paris, with a history of the present outbreak."

Outside of this work and wishing to avail myself of the advantages at hand I took up regular work in the laboratory of the Pasteur Institute under the division of "biological chemistry applied to hygiene." This work continued until February, when I went to the laboratory of the Hospital Saint Louis to remain until receiving my orders to return to the United States.

During the months of July and August I had the pleasure of attending the Congresses of Applied Chemistry, of Medicine, and of Hygiene. At the first I had the honor to represent the Service as a delegate.

With the close lines of communication between France and the United States it is fortunate that plague has not succeeded in entering that country, but had it done so I believe the Service was prepared and would have been able to immediately institute both at Paris and the ports of France any measures regarding both freight and passengers that might have been necessary to prevent its transportation across the Atlantic.

Respectfully,
S. B. Grubbs,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

LIVERPOOL.

Report of Transactions at the Port of Liverpool, England, from September 7, 1900, to January 5, 1901.

By Asst. Surg. John F. Anderson.

Liverpool, England, *August 14, 1901.*

Sir: I have the honor, in obedience to Bureau letter, July 20, 1901, to make the following report of the transactions at this port from my arrival here, September 7, 1900, to and including June 30, 1901:

As my work here has been under two distinct sets of orders, I think it best to so divide the report. The first period is embraced under orders which were strictly for quarantine purposes on account of plague in Glasgow. The second period covers the time from January 15, 1901, and on, during which I was only concerned with the examination of passengers for Canadian ports, under instructions from the Immigration Bureau.

PERIOD OF INSPECTION FOR QUARANTINE PURPOSES.

In obedience to telegraphic orders I arrived here from London September 7 and began work that day by inspecting the Cunard steamship *Lucania*, with a total of 1,573 persons. The same day I called on the managers of the different passenger lines and explained my orders. They all readily agreed to assist me in every way possible, as they were much afraid of their ships being quarantined on arrival in the United States. I agreed to pass persons from Glasgow if in satisfactory physical condition—no fever, no enlarged glands, and no bronchitis—after complete disinfection of their effects. Such persons were also to be specially noted by the ship surgeon, and their temperature taken by him twice daily. The number of Glasgow passengers by any one ship never exceeded 10. I was at first much handicapped by the lack of assistance, but on September 20 Assistant Surgeon Bahrenburg arrived, and with the occasional help of a temporary acting assistant we covered the work satisfactorily.

In the beginning of the work I inspected crews and passengers in conjunction with the board of trade officials, but I soon found it not satisfactory. I then inspected the crew and cabin passengers with the board of trade, but the steerage were all seen in the large waiting room on the stage before embarkation. All persons with any departure from the normal were put aside for more careful examination; if then the trouble was clear and unimportant they were allowed to embark. At the same time the luggage was inspected and labeled by an employee of the consulate, all food being thrown out. All bedding was disinfected, as well as the entire effects of all Glasgow passengers. The rejections were very few—only 33 out of 12,820 steerage.

The class of passengers by the Liverpool lines to United States ports I believe to be the best from any European port. They are chiefly Irish, English, and Scandinavians. A considerable number of Russian Jews are carried by the American line to Philadelphia who are much below the average. Two of the Liverpool lines refuse them altogether.

The crews of cargo vessels were inspected aboard ship within one to one-half hour before sailing, but I am sure that we did not always see the identical persons who sailed, as often members of the crew would desert the ship as she was leaving the dock and substitutes had to be shipped in their place. Another class who were a great source of worry were the cattlemen, who were always late and usually drunk. I several times refused to pass them, though I had no good reason therefor. I have not much faith in the efficacy and use of the inspection of the crews of freight ships where the conditions are such as they are in Liverpool. On account of the tides the ships can only leave the docks twice in the twenty-four hours, and as often there are four or more ships to be seen on a tide, it is manifestly impossible to see each one at the moment of sailing; therefore one can never be sure of seeing the persons who actually go on the ship, and if one does not see all the persons who do go there is little use in seeing any. Of course, the difficulty could be arranged by inspecting the ships after they leave the dock and are in the river; but this would necessitate the employment of a tug or launch at great expense, though in case of an epidemic in Liverpool it would, perhaps, be the wisest course to adopt.

All steerage passengers were required to present the usual inspection card at the time of inspection, and as each person was passed the card was stamped and numbered by an automatic numbering and counting machine. In this way an exact account of the number of passengers passed was had and the number so found was entered on the bill of health. There were attempts made by two of the lines to have put a greater number of steerage on the bill of health than I had seen and counted, but after I had delayed their ships once or twice for an hour while search was made for the persons with unstamped cards they ceased to try to deceive me and would not allow any steerage to embark after a certain time unless their cards were stamped and numbered.

The freight question gave but little trouble, as the consulate here has always had a thorough understanding with the shipping people in regard to prohibited articles in strict accordance with the revised regulations. The vessels leaving this port were, during my service, with three exceptions, steamers. Not one was under the American flag.

Only one ship left without inspection and bill of health, and it was an undoubted case of carelessness on the part of the captain. I refer to the steamship *Lackawanna*, for Philadelphia, a report of which was made to the Bureau on October 23, 1900.

The number of ships and persons inspected from September 7 to November 17, when the inspection was discontinued by the Bureau, was as follows:

Ships inspected	222
Cabin passengers examined	12,269
Steerage passengers examined	12,820
Crew examined	17,596
Total	42,685
Rejections for various causes	33
Pieces of Glasgow baggage disinfected	47
Pieces of Russian baggage disinfected	157
Supplemental bills of health	5
Smallest number of ships in one week	15
Largest number for one week	26

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Respectfully,

JOHN F. ANDERSON,
Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

LONDON.

REPORT OF TRANSACTIONS AT THE PORT OF LONDON, ENGLAND, DURING THE FISCAL YEAR ENDED JUNE 30, 1901; ALSO SUPPLEMENTAL REPORT OF TRANSACTIONS FROM JULY 1 TO SEPTEMBER 15, 1901, INCLUSIVE.

By P. A. Surg. A. R. THOMAS.

LONDON, *September 24, 1901.*

SIR: I have the honor to submit the following report of the transactions of the Service at this station for the fiscal year ending June 30, 1901.

As the inspection of vessels sailing from this port for ports in the United States had been discontinued on June 30, 1900, by official order, the work of the station has been largely that of observation of sanitary conditions in London and Great Britain, and the giving of advice to consuls and shippers regarding the regulations governing various classes of freight. Our attention has been particularly directed toward the occurrence of plague, of which a number of isolated cases have occurred at the various ports of Great Britain, as well as a more extended outbreak at Glasgow and a limited ship infection at Hull.

On August 4, 1900, I reported to the Bureau the occurrence of plague among the crew of the steamship *Roma* at this port. There were two cases that were diagnosed bacteriologically after having been taken to hospital, and two of their fellow-sailors, who had died previously, were later thought to have had plague. The history of these cases is interesting because of the long period that must have elapsed since the last exposure. All the cases were among the Lascar crew of a steamship arriving from Sydney, Australia, by Aden, and the first case did not develop until several days after reaching this port, the sanitary history of the voyage and the medical inspection at quarantine having been satisfactory. No secondary cases arose from the above.

On August 13 notice was given to the London shipping houses through this office that dried fruits as well as new and second-hand rugs and carpets from Smyrna were prohibited from entering into the United States, owing to Smyrna being an infected port.

On August 29, in accordance with instructions from the Bureau, I proceeded to Glasgow, Scotland, owing to a report of plague being present in that city. The city was declared infected on the 30th, and I remained attached to the consulate there until December 27, when I received orders to return to London. An inspection of all vessels, persons, and things going to the United States was established, and later I was instructed to carry out a similar inspection of vessels for Canadian ports at the request of the Canadian Government. I visited the offices of the principal steamship lines doing business with America, and I found them most ready to coöperate in any measures that I thought necessary. The following letter was therefore sent to the shipping houses:

"SIR: I have to inform you that the following will be enforced regarding vessels, their passengers and cargo, sailing from Glasgow to any port in the United States or Canada. Inspection of vessels will be made by daylight as late before sailing as possible. As regards passengers, steerage passengers from Glasgow will be passed only after inspection and the disinfection of their baggage. Steerage passengers in transit will be passed after inspection of themselves and their baggage. Cabin passengers will be passed after inspection. As regards cargo, new merchandise may in general be shipped. Animal products, as wool, hides not chemically cured, and new feathers, etc., should be accompanied by some evidence to show where they were gathered and that they had not been liable to infection in passing through Glasgow. Rags from whatever source, old jute, old rope, old gunny, used feathers, and similar articles can only be shipped after disinfection. Food products, as fresh fruit, fresh and unsalted and smoked meat, and fish and similar articles, should not be shipped. The same applies to all articles presumably infected that can not be disinfected. In case of doubt as to cargo you are requested to communicate with this office. * * * In mooring boats in the city you are requested to provide the mooring lines with tin funnels or some similar contrivance to prevent rats from passing over them."

Later, the shipping of rags and similar articles was entirely prohibited. After a few trials of various plans a routine of practice was followed, giving as little inconvenience as possible to shippers with the maximum of safety. Acting Assistant Surgeon Hough arrived to assist me, and we were able to make all inspections without any great delay to vessels. The Clyde being a tidal river, sailings usually took place at about the same time on all the lines, but fortunately the docks were not widely scattered.

The system of inspection as established for passenger boats was about as follows: The day before sailing as much baggage as possible was inspected on the docks, and the disinfection of such as was necessary accomplished; the latter included the baggage of the few steerage passengers leaving from Glasgow, and the bedding of continental steerage. This process of inspection of baggage, involving as it did the opening of each piece in order to show its contents, was a novelty apparently to the Glaswegians. Incidentally, all fruit and food product was thrown out of the baggage. Steerage passengers were examined as they were embarked at the same time as the inspection by the physician of the board of trade, and passengers as largely as possible were kept out of Glasgow until nearly sailing time. Cabin passengers were also examined on boarding, and there was always the greatest difficulty in this process, as they came on board at various times during the day of sailing, and eventually it became necessary to restrict the time of embarkation.

The inspection of the vessel and crew was made on the day of sailing in company with the officers of the board of trade and was most thorough. The crew were a hard problem and probably the most dangerous element. At muster they were seldom all present and often there were many in a beastly state of intoxication. They were passed before the examining officer in single file, and each man examined as to his bodily temperature and the condition of his lymphatic glands, cervical, axillary, and inguinal, and in case of any suspicion they were put aside for a more careful examination. Any sailor having a temperature above 100° C. was invariably rejected. The crew was seldom complete at the time of this inspection, and it had been customary for the master of each vessel to complete the list at Greenock, 23 miles below. This, however, was not satisfactory to me, as any number of new men might be shipped, and it was arranged that a board of trade officer should visit the vessel before sailing in order to sign on any additional men, and after the list was complete the articles were signed by the inspecting officer, thus making it impossible to add any new men without the fact being apparent to the quarantine officer. Objection was raised to this signature by the local board of trade officers, but the higher authorities granted me permission to continue the practice.

Freight manifests were another source of difficulty, it not having been customary to present the complete manifest before the sailing of the vessel, and it was sent on a few days later by mail. This difficulty did not seem surmountable, as freight was brought down for shipment almost to the moment of the sailing of the vessel, and there was apparently no authority to change this process, but a complete list of freight and bills of lading was always furnished me. Certain classes of articles, particularly wool, hides, etc., were accompanied by a certificate showing where they had originated and stating that they had passed through Glasgow without repacking. The class of freight offering the most difficulty was rags, old jute, old rope, etc., the dealers in which commodities were most persistent in their efforts to have the restrictions removed.

During the period that inspection was carried on 72 vessels were inspected, with a total crew numbering 2,153—cabin 2,689, steerage 1,007, cattlemen 341; 1,041 pieces of baggage were inspected and 165 pieces disinfected. On November 16, the port of Glasgow having been declared free from plague, inspection was discontinued by official order.

At no time during the period of inspection was any case suspicious of plague discovered in the shipping. Five members of crew were, however, rejected for slight fever, and 7 passengers for various causes.

The history of the plague in Glasgow was briefly as follows: On August 3 a child and its grandmother sickened, the child dying on the 7th and the grandmother on the 9th; the cause of death being certified as enteritis. "Wakes" were held on these bodies and were largely attended. August 12 the husband of the grandmother became ill, and was removed to hospital August 27, suffering from plague. August 19 a child in a second family who had visited the "wake" became ill, and died after forty-eight hours; she was only seen by a medical man a few minutes before death, and was thought to have died from pneumonia. Meanwhile two other members of the same family became ill, and the suspicions of the attending physician being aroused, they were sent to the fever hospital, diagnosed enteric. At the hospital they were at once suspected to be suffering from plague, and after a few days this became a certainty, and on August 30 the city was declared to be infected. Vigorous measures were at once adopted by the local authorities, and the neighborhood from which these cases were removed was thoroughly cleaned and disinfected, and a search made for other cases of suspicious illness. All contacts who had attended either of the two "wakes," as well as visitors at the houses, were removed to isolation quarters after being bathed and their clothing disinfected. The wide area about the original foci of infection was declared to be infected. All courtyards were flushed daily, all ashpits emptied and whitewashed, all houses from which cases had been removed were disinfected with sulphur, and the walls and floors afterwards washed with a disinfectant solution.

As a result of the above two wakes, all independently as far as is known, 28 cases of plague were discovered and taken to hospital. In addition a number of deaths occurring previously are suspected to have been plague, because secondary cases seem to have followed them. All cases treated in hospital, with one possible exception, were bubonic, but from the causes of death assigned to previous cases who had died outside, there were probably some pneumonic and septicaemic. One case also occurred in the borough of Govan, which was only discovered at the post-mortem, and which also was pneumonic plague.

A death from plague occurred in Cardiff on October 4 under the following circumstances: A donkeyman arrived in the Tyne on September 23 in the steamship *South Garth* from the River Plate, and was paid off. He traveled overland to Llandaff, a village near Cardiff, where he sickened and went to the infirmary and died October 4. The case was bacteriologically proved to have been plague.

November 2 I reported to you two cases of plague occurring at quarantine in Great Britain. One occurred on the steamship *Ben Lomond*, from the Philippines for London, and was removed to the London quarantine October 26. The second occurred on the steamship *City of Khios*, from Calcutta, and was removed to Glasgow; the latter case was practically convalescent when removed.

January 15 I received orders to proceed to Newcastle and report on the steamship *Highland Prince*, which arrived in the Tyne January 11 with the history of having had the plague during the last voyage. Briefly, the history of this voyage was as follows: She was engaged in trade between Antwerp and the River Plate, and on her last trip had unloaded partly at Antwerp and partly at London and had left the latter port for the Plate. Ten days after leaving London rats were seen running about the deck in a dazed condition, and could easily be caught and thrown overboard, while several were found dead. Eight days later the cook became ill, and in rapid succession the mate, captain, and two passengers; all the cases proving fatal except one passenger. About this time the vessel lay off Bahia, and medical help was summoned, and the diagnosis of plague confirmed. Ten other persons on board were more or less ill and may have had pestis minor. The vessel proceeded to Montevideo where she was disinfected, thence to Buenos Ayres where she discharged in quarantine, and thence to Rosario. Previous to loading at the latter port she was again disinfected, and enormous numbers of dead rats were said to have been found after this process. Two other members of the crew sickened of plague at Rosario and were removed to hospital. Since leaving Rosario there had been nothing of note on board the vessel, and she was thoroughly disinfected on reaching the Tyne.

On my return from Newcastle I stopped at Hull, where plague was reported. I found that the steamship *Friary* had arrived at that port on January 10 with a history of having left Alexandria, Egypt, on December 22, with a clean bill of health, and of calling at Algiers, where only the captain went ashore. One of the crew died just before reaching Hull, and at the time of the medical inspection at quarantine it was decided he had died from natural causes and the vessel was allowed to leave the dock. Two days later two other members of the crew were taken ill, and diagnosed as having influenz with lung complications. Both cases proved fatal after forty-eight hours, and at post-mortem it was shown they had died from pneumonic plague. The vessel was therefore remanded to quarantine, and all the crew isolated and all contacts put under observation. This involved a considerable amount of work, for while the vessel had been lying in dock she had been visited by a considerable number of people. Several other members of the crew sickened, as well as a watchman who had been employed on board while the vessel was in dock, and one of the physicians who had assisted at the post-mortem also developed bubonic plague. A total of nine cases occurred, all among the crew, excepting the watchman and physician, and all proved fatal except the last, who eventually recovered.

Another death from plague occurred at Cardiff on February 1 in the person of an employee of a flour mill who had been gathering up dead rats and conveying them to a furnace. He sickened on January 27 and died February 1. The rats about this section of Cardiff were found at this time to be infected, but no further cases occurred there.

On March 19 a case of plague was reported from Southampton in the case of a Lascar seaman from the transport *Simla*, arriving from the cape. This man had been ill after leaving Capetown, but had apparently recovered, and when the vessel touched at Plymouth he was passed in the medical inspection and the vessel given pratique. Consequently the vessel was not inspected at Southampton. The Lascar in question applied at the infirmary in Southampton for treatment, and his case being considered suspicious he was sent to the isolation hospital and the bacillus pestis was recovered from the pus of the bubo.

Having had a considerable number of cases of plague in Great Britain during the year with no extended outbreak, one is forced to the conclusion that there are conditions essential to the propagation of plague other than a focus of infection.

During the early months of the present year a considerable epidemic of smallpox has occurred in Glasgow, which, however, subsided early in the spring after very thorough vaccination and revaccination of the population.

Respectfully, A. R. THOMAS,
Passed Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

LONDON, *September 26, 1901.*

SIR: I have the honor to submit the following report of the transactions of the Service at this station from July 1 to September 15, 1901.

During this period there have been no important developments. The British congress on tuberculosis was held in this city from July 22 to 26, and to which I was appointed a delegate. A report of the transactions of this congress has been forwarded.

About the middle of July smallpox broke out in London, after having been absent from the city in epidemic form for some years, and a considerable number of cases have occurred and continue to do so. Unfortunately, the law making vaccination compulsory was removed some years ago, and a considerable unvaccinated school population has sprung up, which, in the crowded districts, is considerable of a menace.

There has been no case of plague certified in England during this period.

Respectfully,

A. R. THOMAS,
Passed Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

BERLIN.

REPORT OF TRANSACTIONS AT BERLIN, GERMANY, FROM JUNE 15, 1900, TO APRIL 5, 1901, INCLUSIVE.

By P. A. Surg. JOSEPH B. GREENE.

MARINE-HOSPITAL SERVICE,
Port of New York (Stapleton), N. Y., September 11, 1901.

SIR: I have the honor to submit the following brief report of my work performed while on duty at Berlin, Germany:

Pursuant to Bureau orders of June 15, 1901, I left Bremen to report at the American consulate-general in Berlin for duty. My instructions were to report on the progress of epidemic diseases, especially those likely to be imported to America, and also to investigate the source of emigrants bound for the United States, with a view to determining the danger of their conveying infection to our shores.

At this time plague was occurring occasionally at several European ports and existed in uncertain amount in Egypt and Turkey, so I was expected to keep accurately informed as to its progress and to make weekly reports. In addition to the above I was to keep in touch with the bacteriological laboratories and clinics, so as to report whatever advances were made in the study of epidemic diseases, especially those of a quarantinable nature.

Arriving at Berlin, I at once reported at the office of Consul-General Mason, whom I found ready to cooperate with me in carrying out the instructions received from the Department. He had formerly rendered invaluable services to his country while consul at Marseille during a severe outbreak of cholera.

Provided with proper credentials, I next called at the American embassy and met his excellency the Hon. Andrew D. White, who at once took measures to secure for me admittance into the various laboratories, hospitals, etc. I frequently had occasion to visit the imperial health office, where I was able to secure valuable information concerning epidemic diseases in various parts of the world. Weekly reports were sent from this office to the consulate, containing data secured from German consular reports and other sources, which were of great service to me.

I soon availed myself of the opportunity of visiting the filtration beds that purify the water supply for the city of Berlin. The small percentage of typhoid fever attests the efficiency of the sand filters. The next place of interest to visit was the sewer farm, where all sewage is transported and used as fertilizer. The wonderful tranformation of sandy barren plains to a green and fertile field is almost miraculous, especially as the change was made with a minimum of odor to be detected.

I next inspected the method of disinfecting old rags intended for shipment to America. Although the method used is not all to be desired, yet, considering the exceptional immunity from epidemic diseases enjoyed by Germany, there is no occasion for uneasiness from this source. In case of an outbreak of an epidemic the shipment of old rags should at once be discontinued.

Through the courtesy of Professor Von Leyden I was granted permission to visit the sanatorium for tuberculosis at Belzig. This is one of the newest and best of Germany's sanatoria. On this I submitted a report to the Bureau at the time of my visit. Through the courtesy of Prof. Robert Koch I was enabled to visit the institute for infectious diseases and study there the method of treating cases of infection with rabies. On this I also submitted a report at the time.

I matriculated at the University of Berlin and received instruction in the various clinics and laboratories in order to keep in closer touch with the latest medical discoveries.

On November 16 I received cable orders to proceed to Bremen and investigate the plague conditions prevailing there and report by wire to Bureau. This I did, and was able to assure the Bureau that no danger of spread of the infection was likely to result from the fatal case of plague that had occurred.

I also submitted during my stay in Berlin several reports on the discoveries and advances made in the science of medicine.

On April 6 I received orders to proceed to Washington and report at the Bureau.

Respectfully,

JOSEPH B. GREENE,
Passed Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

MEDICAL INSPECTION OF ALIEN IMMIGRANTS.

UNITED STATES.

As stated in the last annual report, the medical officers of the Marine-Hospital Service located at 29 ports of the United States were assigned the duty of inspecting all arriving alien immigrants, at the request of the Commissioner-General of Immigration. It will be seen from the table appended hereto that during the fiscal year ended June 30, 1901, 472,111 immigrants were inspected.

Tabulated statement of medical inspection of arriving alien immigrants at various ports of the United States.

Name of port.	Total of immigrants inspected.	Passed.	Certified as physically unsound.	Disposition of those certified as physically unsound.					
				Cases pending at beginning of year.	Certified.	Total to be accounted for.	Refused admission.	Admitted.	Cases pending at close of year.
Portland, Me	2,860	2,843	17	......	17	17	1	16	......
Gloucester	......	......	......	......	......	......	......	......	......
Boston	26,288	26,216	72	......	72	72	19	53	......
New Bedford	280	280	......	......	......	......	......	......	......
Providence	50	50	......	......	......	......	......	......	......
New York	393,616	390,828	2,788	23	2,788	2,811	627	2,143	41
Philadelphia	13,389	13,109	280	......	280	280	36	244	......
Baltimore	17,152	17,150	2	......	2	2	1	......	1
Newport News	......	......	......	......	......	......	......	......	......
Norfolk	......	......	......	......	......	......	......	......	......
Savannah	......	......	......	......	......	......	......	......	......
Brunswick	......	......	......	......	......	......	......	......	......
Jacksonville	......	......	......	......	......	......	......	......	......
Key West	2	1	1	......	1	1	1	......	......
Port Tampa	......	......	......	......	......	......	......	......	......
Pensacola	......	......	......	......	......	......	......	......	......
Mobile	......	......	......	......	......	......	......	......	......
New Orleans	4,399	4,386	13	......	13	13	13	......	......
Galveston	417	417	......	......	......	......	......	......	......
Laredo	2,024	2,021	3	......	3	3	3	......	......
Eagle Pass[a]	1,633	1,575	58	......	58	58	58	......	......
El Paso	2,574	2,561	13	......	13	13	13	......	......
San Diego	121	121	......	......	......	......	......	......	......
San Francisco	5,849	5,777	72	......	72	72	62	10	......
Portland, Oreg	3	2	1	......	1	1	1	......	......
Astoria	35	35	......	......	......	......	......	......	......
Tacoma	26	26	......	......	......	......	......	......	......
Seattle	756	744	12	......	12	12	3	9	......
Port Townsend	637	636	1	......	1	1	......	1	......
Total	472,111	468,778	3,333	23	3,333	3,356	838	2,476	42

[a] Month of September, 1900, at Eagle Pass, estimated, record being lost.

CUBA.

ESTABLISHMENT OF BARRACKS FOR DETENTION OF IMMIGRANTS AT THE PORT OF HABANA.

To prevent an outbreak of yellow fever in Habana among newly arrived nonimmune immigrants, Governor-General Wood proposed the establishment of a detention station for such immigrants outside the city of Habana, to which they would be conveyed immediately upon arrival, there to remain until employed on the plantations, thus avoiding the necessity of passing through the city. It was the desire of Governor-General Wood that this camp be under the immediate supervision of a medical officer of the Marine-Hospital Service. The following communication from the chief quarantine officer for the island of Cuba explains the idea of establishing such a camp.

HABANA, CUBA, *September 10, 1900.*

SIR: Referring to my telegram of September 8, 1900, in regard to the establishment of immigrant barracks upon the hills across the bay back of Triscornia, I have the honor to report that the governor-general is taking this action in order to prevent the large number of immigrants expected from Spain and the Canary Islands from entering the city of Habana, thereby contracting yellow fever and distributing it throughout the country districts. After passing through quarantine inspection they will be detained in these barracks until they can be sent out to the plantations where they are to be employed.

General Wood wishes Dr. Menocal, of this Service, to take immediate charge of these barracks. I consider this movement a wise measure, and can spare Dr. Menocal for the service, and request your approval of the same.

I inclose herewith copy of Special Orders, No. 155, instituting a board of officers to carry out the project as soon as possible.

Respectfully,

A. H. GLENNAN,
Surgeon, U. S. Marine-Hospital Service,
Chief Quarantine Officer for the Island of Cuba.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

[Inclosure.]

SPECIAL ORDERS, }
No. 155. }

HEADQUARTERS DIVISION OF CUBA,
Habana, Cuba, September 8, 1900.

3. A board of medical officers, to consist of Maj. Valery Havard, Medical Department, chief surgeon of the division; Maj. William C. Gorgas, Medical Department, chief sanitary officer, city of Habana; Surg. A. H. Glennan, U. S. Marine-Hospital Service, chief quarantine officer for the island of Cuba, Dr. Augustin Varona; Dr. Vicente Benito Valdes; Acting Asst. Surg. T. C. Lyster, U. S. Army, will meet at the office of the chief surgeon of the division, at 10 o'clock a. m., September 10, 1900, or as soon thereafter as practicable, to inquire into and report upon the advisability and feasibility of establishing a detention camp near Triscornia, Cuba, for the detention of immigrants who arrive in this port, in order that the spread of infection in the city of Habana may be prevented.

This board will also consider all particulars, such as erection of frame buildings, including details relating to establishment of immigration bureau, etc., deemed necessary for the establishment of such a camp.

The travel enjoined is necessary for the public service.

By command of Major-General Wood:

H. L. SCOTT, *Adjutant-General.*

In accordance with the request of Governor-General Wood, an acting assistant surgeon of the Marine-Hospital Service was detailed for duty at the Triscornia detention camp, but was retained on the rolls of the Marine-Hospital Service.

Tabulated statement of medical inspection of arriving alien immigrants at the various ports of Cuba, fiscal year ended June 30, 1901.

Name of port.	Total immigrants inspected.	Passed.	Certified as physically unsound.	Disposition of those certified as physically unsound.					
				Cases pending at beginning of year.	Certified.	Total to be accounted for.	Refused admission.	Admitted.	Cases pending at close of year.
Habana	21,978	21,972	6		6	6	6		
Batabano									
Matanzas	2	2							
Cardenas									
Isabella de Sagua	5	5							
Caibarien									
Nuevitas	11	11							
Baracoa									
Gibara	251	251							
Puerto Padre									
Banes									
Santiago	1,163	1,163							
Guantanamo	42	42							
Daiquiri	394	394							
Manzanillo	27	27							
Cienfuegos	115	115							
Casilda									
Santa Cruz									
Total	23,988	23,982	6		6	6	6		

PORTO RICO.

Tabulated statement of medical inspection of arriving alien immigrants at the various ports of Porto Rico, fiscal year ended June 30, 1901.

Name of port.	Total immigrants inspected.	Passed.	Certified as physically unsound.	Disposition of those certified as physically unsound.					
				Cases pending at beginning of year.	Certified.	Total to be accounted for.	Refused admission.	Admitted.	Cases pending at close of year.
San Juan	568	568							
Mayaguez	69	69							
Ponce	135	134	1		1	1	1		
Total	772	771	1		1	1	1		

QUEBEC, CANADA.

At the request of the Commissioner-General of Immigration a medical officer of the Marine-Hospital Service was detailed to the port of Quebec, Canada, for the purpose of inspecting immigrants en route to the United States. He assumed his duties in Quebec May 20, 1901.

REPORT OF TRANSACTIONS AT THE PORT OF QUEBEC, CANADA, MAY 20 TO JUNE 30, 1901.

By Asst. Surg. V. G. HEISER.

QUEBEC, CANADA, *June 30, 1901.*

SIR: I have the honor to transmit herewith the report of the transactions of the medical division of the immigration service at this port from the commencement of the medical inspection on May 20 ultimo to the ending of the fiscal year, June 30, 1901.

During this period there were inspected 3,626 immigrants; passed, 3,575; detained, 51. The cause of the detention and the final disposition of the cases is shown in the medical and surgical report herewith inclosed.

The conditions under which the inspection must be made are very unsatisfactory, and a thorough inspection under the present arrangement is impossible. A new building is under construction and will probably be ready for occupancy about August 1. The Canadian officials kindly consented to make the interior arrangement of the building conform to the ideas of the service here. When the building is completed the facilities for making the inspection will compare favorably with any of those contained at the first-class immigrant stations in the United States.

Much difficulty has been experienced with the hospital cases—in the first place to induce hospitals to accept them, and in the second place to detain them after they have been accepted. Lately we have not had so much trouble in this direction, and it is believed that as the matter is better understood the difficulty will disappear.

Respectfully,

VICTOR G. HEISER,
Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

Medical and surgical report of the immigrants ordered detained by the United States immigration service at Quebec, Canada, from May 20 to the ending of the fiscal year, June 30, 1901.

Diseases.	Examined.	Ordered to hospital.	Released by special board of inquiry.	Ordered deported by special board of inquiry.	Deported.	Disappeared.	Recovered and released.	Under observation.
Atrophy and shortening of right leg	1		1					
Caries of spine	1			1	1			
Chronic luxation of hip joint	1		1					
Deaf mute	1		1					
Favus	3	3		3		3		
Gonorrhœa	1	1					1	
Hernia	19		5	14	1	13		
Insanity	1	1		1	1			
Kyphosis	1		1					
Marasmus	1	1					1	
Measles	3	3					3	
Partial opacity of both cornea	1		1					
Pregnancy	3		2					1
Scarlet fever	2	2						2
Scoliosis	1		1					
Suppurating disease of hip joint	1			1		1		
Trachoma	9	9		6	2	4		3
Weak mind	1	1		1	1			
Total	51	21	13	27	6	21	5	6

EMIGRATION INSPECTION AT FOREIGN PORTS.

LIVERPOOL, ENGLAND.

Acting upon the recommendation of the Commissioner-General of Immigration, and in accordance with the written request of the agents of the Allan Line, Dominion Line, and Beaver Line of steamships, which ply between Liverpool and Canadian ports, a medical officer of the Marine-Hospital Service was stationed in Liverpool for the purpose of inspecting all emigrants leaving Liverpool for Canadian ports, whether ultimately destined to the United States or not.

INSTRUCTIONS ISSUED TO THE MEDICAL OFFICER ON DUTY AT LIVERPOOL BY THE COMMISSIONER-GENERAL OF IMMIGRATION.

Treasury Department,
Office of Commissioner-General of Immigration,
Washington, December 22, 1900.

Asst. Surg. John F. Anderson,
U. S. Marine-Hospital Service, United States Consulate, Liverpool, England.

Sir: I have to inclose herewith copy of a letter of the 22d ultimo from this Bureau, requesting that a medical officer of the Marine-Hospital Service be detailed to Liverpool for the purpose of examining all alien emigrants leaving that port for the Dominion of Canada; also a copy of a letter written by the representatives of the Allan Line, Dominion Line, and Beaver Line, in Montreal, respectively, and addressed to Hon. Peter B. Laird, United States commissioner of immigration, Quebec, promising cooperation with the medical representative of the United States Government if it is deemed desirable to detail such an officer for duty in Liverpool.

This request having been granted, you are hereby assigned to duty at the port of Liverpool as medical inspector of alien emigrants sailing from that port for ports in the Dominion of Canada, whether such alien emigrants are ultimately destined for the United States or not.

Not being attached to the United States consulate in Liverpool, it will probably be necessary, and you are hereby authorized to submit recommendations regarding the rental of a suitable office at moderate terms for your official occupancy.

You should call upon the representatives of all steamship lines plying between Liverpool and ports of Canada, explain the nature of your instructions to them, and learn whether they will afford you proper facilities for carrying out your duties.

While the emigrants are to be examined by the ships' surgeons and the medical representative of the British Board of Trade, this should not influence you in any manner in your official decision regarding any case which comes before you. You may use your judgment as to whether or not your examination will be coincident with that of the ships' surgeons and the surgeons representing the British Board of Trade or should be conducted separately.

It will be your duty to designate to the steamship companies such alien emigrants as will, in your opinion, be denied admission to the United States under the quarantine and immigration laws and regulations of the United States, but you have no authority to forbid such persons taking passage; in other words, you merely serve in an advisory capacity.

With each vessel departing from Liverpool for Canada you should transmit to the United States commissioner of immigration at the port of arrival a list of all aliens whom you have designated as probably unfit for entry, as above indicated.

This letter should also show which of said emigrants have been refused passage by the steamship company and which, if any, have been allowed to sail. You are directed to transmit a weekly report of all transactions to the Marine-Hospital Bureau, as has been the custom heretofore. In the event that any circumstances arise which would tend to diminish the efficiency of your inspection, you should make immediate detailed report thereof, submitting your views and recommendations.

Inasmuch as this inspection service is wholly for the benefit of the immigration service and is not contemplated in the acts of Congress approved March 3, 1891, and March 3, 1893, imposing the duty of medical inspection of immigrants arriving at ports of the United States upon medical officers of the Marine-Hospital Service, your salary and allowances and the necessary expenses incident to this detail will be paid from the immigration fund. You will forward your pay rolls and other vouchers to the Treasury Department (Commissioner-General of Immigration) for payment.

Respectfully,

T. V. Powderly,
Commissioner-General of Immigration.

Approved:
H. A. Taylor, *Assistant Secretary.*

REPORT OF TRANSACTIONS AT THE PORT OF LIVERPOOL.

By Asst. Surg. JOHN F. ANDERSON.

LIVERPOOL, ENGLAND, *August 14, 1901.*

SIR: I have the honor, in obedience to Bureau letter, July 20, 1901, to make the following report of the transactions at this port from my arrival here, September 7, 1900, to and including June 30, 1901.

As my work here has been under two distinct sets of orders, I think it best to so divide the report. The first period is embraced under orders which were strictly for quarantine purposes on account of plague in Glasgow. The second period covers the time from January 15, 1901, and on, during which I was only concerned with the examination of passengers for Canadian ports under instructions from the Immigration Bureau.

* * * * * * *

PERIOD OF INSPECTION OF PASSENGERS FOR CANADIAN PORTS.

I received orders from the Bureau on January 15, 1901, detaching me from the United States consulates in London and Liverpool and assigning me to the Immigration Bureau for duty in Liverpool. On the same date I received instructions from the Commissioner-General of Immigration to call on the different Canadian passenger lines and arrange for the inspection of passengers by their lines. At that time there were three lines carrying passengers direct to Canada, viz, the Dominion, Allan, and Beaver. I called on the managers of the different lines and explained my instructions and wishes and requested to know when I should begin work. The Allan Line said at once; the Dominion and Beaver people said they would write me next day. After waiting one week I wrote them asking to know their decision; they then wrote saying that I could begin at once. I will here say that the Dominion line soon after discontinued their Canadian service, and so I will not consider them further. The Allan line readily promised me every assistance, a promise that they have kept to the best of their ability. The Beaver people made the same promise, and in fact have made it many times, but have often forgotten to keep it. The Beaver people said they would try it for a while but did not think they wanted it, as they could not see the necessity, since their passengers were inspected on the continent when booked, again in Liverpool at the boarding house, then by the ship surgeon, and finally by the board of trade.

The board of trade in an official letter refused to allow me to inspect Canadian passengers at the time of their examination and added that they thought it rather impertinent for a United States official to inspect passengers by a British ship from one part of the British Empire to another. This difficulty was avoided by inspecting the passengers before embarkation. But by inspecting the passengers before the board of trade examination a large loophole was left for putting persons aboard whom I had not inspected, a thing that has happened on the Beaver boats often, and I believe still occurs. The Beaver people have absolutely refused to be bound by any count I may make, as they claim the right to allow passengers to embark up to the last minute. Several attempts were made by them to put passengers aboard whom I had rejected. I caught them three times, but am sure it occurred many times without my knowledge.

The different companies agreed to accept my decision in regard to the rejection of persons who were presumably intended for the United States if suffering from trachoma and favus but from no other diseases, hence my rejections have been practically for these two diseases alone. On several occasions I have rejected persons who told me that they had previously been rejected in New York or Naples.

The Canadian Pacific Railroad manager in Liverpool called to see me soon after I began work and volunteered any assistance possible. I asked him how he was interested in the matter and he replied, to prevent, if possible, their trains being detained on the frontier for inspection of immigrants. I thanked him and told him the Beaver people did not seem to want to act fair. He called on the Beaver people and told them that if they did not render me every assistance possible in the inspection he would refuse to move their passengers on arrival in Canada, a threat that has helped matters some. I will say here that Beaver people are quite down on me and the inspection, and blame the great decrease in steerage Italian passengers directly to the return of rejected persons to Italy. Ships that carried 800 to 1,000 passengers at the corresponding period of last year now have only from 350 to 500; this in spite of the fact that the other lines are carrying more than last year at the same time.

A significant fact in relation to the above is that when I began the inspection in February 80 per cent of the steerage passengers were booked direct to United States points; now, only about 40 per cent. Persons booked to the United States are refused passage if rejected; persons booked to Canadian points are allowed passage even if rejected. The Beaver Line is not in the passenger conference and carries steerage passengers for about £4 from Liverpool to Canada, which is about 30 shillings less than the regular rate, consequently the class of passengers is very poor. The Allan Line passengers are the usual good class of Liverpool emigrants.

I made my first inspection of Canadian passengers on February 5. Below will be found the numbers, rejection, etc. I have given the two lines separate in order to emphasize the difference in the class of passengers.

Allan Line:	
Ships inspected	18
Passengers inspected	4,553
Total number advised rejection	10
Cause of rejection—	
Trachoma	3
Favus	6
Other causes	1
Percentage of passengers rejected	0.2
Percentage of rejected persons allowed by company to embark	40
Beaver Line:	
Ships inspected	21
Passengers inspected	9,950
Total number advised rejection	230
Cause of rejection—	
Trachoma	79
Favus	142
Other causes	9
Percentage of passengers rejected	2.31
Percentage of rejected persons allowed by company to embark	30
Summary:	
Total number of passengers examined	14,503
Total number rejected	240
Percentage of persons examined rejected	1.65

In regard to the foreign inspection service for quarantine purposes only, I am more than ever convinced of the value of it in time of epidemics, but I am almost of the opinion that the inspection should be restricted to passenger vessels, their crew and passengers, especially steerage, and to the supervision of freight. As to the inspection of the crews of cargo ships I must say that I have always had little faith in its value, and now, since my experience in Liverpool, have still less. I think it would be of far more value to have Federal control of home quarantine and a uniform and efficient system of inspection on arrival. In regard to the inspection at foreign ports for the Immigration Bureau I will say that if all the lines could be made to agree to the inspection and would act fairly, agreeing to refuse passage to all persons rejected, it would be a most excellent thing.

The value of the present inspection in Liverpool of Canadian passengers is, in my opinion, small, on account of the lack of cooperation of all the lines concerned, and I believe the best interests would be served by a discontinuance of the work. In conclusion, I have the pleasure to express my thanks to Assistant Surgeon Bahrenburg for his most efficient service while on duty here. Also to Consul Boyle and to Vice-Consul Sulis for many courtesies, both official and unofficial, and for their willing assistance when called upon.

Respectfully,

John F. Anderson,
Assistant Surgeon, Marine-Hospital Service.

NAPLES, ITALY.

A medical officer of the Marine-Hospital Service has remained on duty in the office of the United States consul at Naples during the fiscal year 1901. A report of the transactions at Naples follows:

REPORT OF TRANSACTIONS AT THE PORT OF NAPLES, ITALY, SEPTEMBER 15, 1900, TO JUNE 30, 1901, INCLUSIVE.

By P. A. Surg. J. M. EAGER.

MARINE-HOSPITAL SERVICE,
Naples, Italy, August 9, 1901.

SIR: I have the honor to submit the following report of the transactions of the Service at this port for the period from September 15, 1900, to June 30, 1901, inclusive:

Statistics of the Service at Naples.

Month.	Vessels inspected.	Baggage inspected.		Pieces of baggage disinfected.	Emigrants inspected.
		Large pieces.	Small pieces.		
1900.					
September 15—30	6	866	3,402	603	3,006
October	14	1,973	7,189	1,391	6,223
November	13	1,768	7,037	1,695	7,499
December	11	892	4,454	863	3,603
1901.					
January	15	1,086	7,435	1,700	5,419
February	13	811	9,944	1,957	8,700
March	17	1,358	16,793	3,108	12,362
April	22	2,593	29,180	5,074	21,615
May	23	2,473	12,713	15,131	18,035
June	20	1,687	....	13,552	9,876
Total	154	15,507	98,147	45,074	96,368

Number of rejections advised for the following causes:

Trachoma	788
Favus	125
Hernia	320
Senility	69
Ringworm	21
Smallpox	7
Measles	12
All other causes	607
Total	1,949

Proportion of rejections advised to emigrants inspected, nearly 2 per cent.

INSPECTION AT NAPLES.

The inspection at Naples serves a double purpose: First, an examination of vessels, their cargo, passengers, crew, personal effects of same, food and water supply, together with an inquiry into the sanitary history of the vessels as a preliminary to granting the bill of health which is signed conjointly by the United States consul and the medical officer on duty here; secondly, an examination of emigrants with a view to the detection of diseases or deformities that render persons inadmissible into the United States under the immigration laws. Except in the case of persons suffering from or exposed to contagious disease, the powers of the inspector at Naples are advisory only.

In making the examination of emigrants who present themselves for embarkment, diseases are considered, therefore, under two categories: First, those of which the quarantine laws take cognizance, namely, the so-called quarantinable diseases and measles, scarlet fever, and diphtheria; and, secondly, those for which intending emigrants are excluded under the immigration laws. These latter conditions are divided into three groups, loathsome diseases, dangerously contagious diseases, and diseases and deformities which are likely to render the person a public charge.

PATHOLOGY OF THE ITALIAN EMIGRANT.

Trachoma.—This malady continues to be the most important of all diseases for which the rejection of emigrants is recommended at Naples. The fact is not remarkable considering the extent of the distribution of trachoma in southern Italy. The celebrated Neapolitan oculist, Professor de Vincentiis, has arrived at the conclusion, from his extensive experience, that at least 75 per cent of the cases that present themselves at the Italian ophthalmic clinics are trachomatous. In Sicily, especially in the provinces of Palermo, Girgenti, Catania, and Messina, the disease is practically a scourge, such is the extent of its prevalence. Still, as a cause of total blindness in southern Italy trachoma does not exceed 2 per cent. As a cause of partial blindness (monocular blindness, irritable eyes, etc.), the result of consecutive alterations in the cornea, trachoma reaches as high a proportion as 25 per cent.

Although known from the time of Hippocrates, it appears that trachoma was extremely rare in southern Italy until it was introduced by the soldiers of Napoleon I, after the campaign of Egypt. The climate, topographical conditions, and habits and customs of the people rendered southern Italy a suitable place for the diffusion and persistence of the disease. In America, with its diversity of climate and manifold topographical conditions, it would seem likely that trachoma might, in a similar manner, find a suitable lodgment if stringent measures are not continued to limit the sources of its introduction.

Favus.—This disease in all its stages is met with on the examination of steerage passengers leaving Naples. Many are cured cases with cicatricial bald patches and dry, wiry hair. If there is no evidence of active disease, they are allowed to pass. Commencing cases, especially among young persons, are encountered at the departure of nearly every ship. The Italian new born, as an introduction to life, often has its head smeared with a tarry preparation which, undisturbed by washing, remains for many months, and, with the chronic eczematous condition which its presence sometimes excites, serves to complicate diagnosis when the child is brought down the line. Seborrhœa, eczema, psoriasis, and ringworm of the scalp are often seen in the examination of heads. When severe enough to constitute a loathsome disease, they are causes of rejection. Occasionally one sees a text-book case of favus, with yellow, cupped crusts, loose hair that can be pulled out in tufts from the mangy patches, and with the characteristic mouse-like odor. But generally the cases are advanced and are obscured by dirt and eczema, or, on the other hand, they have been scrubbed up so as to pass, if possible, the medical examination.

Hernia.—All male emigrants are examined for inguinal hernia. Considerable expertness is acquired in the examination through the clothing for this affection. An examination by palpation of the scrotum is made, and if it is found to be free from enlargement the inguinal region is examined for tumor or truss. If anything unusual is felt, the case is held for more careful scrutiny at the second visit. Frequently the examining hand is laid on sausages, fruit, money bags, and other lumps of a nonpathological nature. When the hernia suspects are mustered for the second visit, many of the herniæ naturally turn out to be hydroceles, sarcomata, syphilitic and tubercular testicles, and other maladies of the inguinal and scrotal regions.

Deformities.—It is surprising that the steamship companies should sell transportation to some of the crooked and twisted specimens of humanity that present themselves for embarkation. The humpback, the rickety cripple, limping persons whose bones and joints have had havoc played with them by tubercle, typhoid, rheumatism, specific disease, trauma, and other disabling conditions, present themselves and are surprised to learn that they can not be received into the United States without assurance that they will not become public charges.

Febrile and eruptive diseases.—Whenever there is a suspicion of fever, or when there is an eruptive disorder, the person so affected is set aside for a careful reexamination. This has been especially necessary during the extensive outbreak of smallpox that has been present at Naples. Several persons detained owing to fever and an eruption have later developed smallpox.

Poor physique.—Persons of notably poor physique are always held for a second examination. Many cases of malarial cachexia are found among them. Unless extremely anæmic, weak, and with greatly enlarged spleens, they are permitted to embark, as it has been found that they are much improved by the sea voyage. Among the cases of poor physique are found many persons with tubercle of the lung, chronic nephritis, valvular disease of the heart, and other grave organic affections that would in all probability render the sufferer a public charge.

Among the many cases of anæmia that are examined here, I have been watching for cases of anchylostomiasis. This disease is said to be very prevalent in certain provinces of Italy, and it has been said that its spread to many parts of Europe has probably been due to the employment of Italian laborers. But I have as yet found no case of anæmia that could be attributed to this cause.

Geroderma dystrophicum.—Among the interesting cases that have presented themselves at the examination have been several examples of geroderma dystrophicum, a curious disease described and named about two years ago by Dr. Gaetano Rummo, of the University of Palermo. At the first visit on the line of emigrants, these men are readily noticed, owing to the yellow, anæmic, wrinkled skin, the beardless faces, the high-pitched feminine voice, and the general manner and carriage of an old woman. In the cases I have seen here, examination has shown an undeveloped condition of the genitals, absence of pubic hair, with abdomen and pelvis of the female type. This disease, though common in Italy, is not peculiar to the country. I have seen several cases in the United States, though I did not recognize them as pathological entities at the time. For example, there was a case, exactly corresponding to Rummo's description, at the United States Marine Hospital, Cincinnati, during the winter of 1899–1900.

VACCINATION.

During the epidemic of smallpox that prevailed here in the latter part of the fiscal year, all emigrants were vaccinated. When this was done ashore, the procedure was under my supervision. My recommendation was accepted as to the source and quality of the vaccine virus and the manner of performing the operation. Each inspection card was stamped with the official seal, or otherwise distinctively marked, as soon as the holder was vaccinated.

INSPECTION OF EMIGRANT BOARDING HOUSES.

Emigrants, while awaiting embarkment at Naples, are lodged in boarding houses known as "locande." These houses are under municipal control, but are generally owned and operated by subagents of the steamship companies. During the prevalence of smallpox these houses have been inspected from time to time by the Marine-Hospital Service.

INSPECTION OF PASSENGERS.

The inspection of passengers is made at the Capitanaria di Porto, a large building belonging to the Italian navy and under the command of the captain of the port. The visit is made in connection with that of the Italian commission, of which the medical officer of the port, the captain of the port, and the chief of police are members.

Intending emigrants, provided with their passport and the United States inspection card, are mustered and formed into a line by "carabinieri reali," soldiers especially detailed for this duty. The line of passengers halts some 20 feet from the place where the medical officer of the Marine-Hospital Service takes his stand. The space of 20 feet is crossed by the passengers singly. They are then examined, special attention being given to the ordinary causes of rejection. The medical officer of the vessel for which passengers are being examined is present at the inspection. Cases that are certainly inadmissible are rejected once and for all at the first visit; cases in which there is a reasonable doubt are detained for the second visit. Persons who have been stopped at the first visit are carefully scrutinized at the second, and, if deemed necessary, are taken into a private room and submitted to a thorough medical inquiry. Following the medical visit the emigrants have their inspection cards stamped by an employee of the service. After being inspected by the Italian commission, they enter an inclosure, where they claim their inspected or disinfected baggage, and are then permitted to go aboard ship.

INSPECTION AND DISINFECTION OF BAGGAGE.

Intending emigrants, before presenting themselves for the medical visit, leave their baggage to be inspected. Inquiry is made as to the nature and source of these effects, and if acceptable the baggage is marked with the regulation inspection label. Otherwise it is transferred in boats or on barges to the Italian disinfecting station on the mole, about a mile distant from the "Capitanaria." Here disinfection is done by steam and dipping in chemical solutions, following the directions of the United States quarantine regulations. Disinfected baggage is marked with the official label and allowed to be taken aboard. The only special measures that can be taken to prevent the reinfection of baggage en route to destination is the assignment to places unoccupied by emigrants of all "not wanted" baggage. In addition the ship's medical officer is impressed with the necessity of redisinfection by approved methods of all baggage that is exposed to infection by any quarantinable disease that may break out aboard.

Respectfully,

J. M. EAGER,
Passed Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

Supplemental report.

MARINE-HOSPITAL SERVICE,
Naples, Italy, September 15, 1901.

SIR: As directed in Bureau letter dated July 20, 1901, I have the honor to make the following report of the transactions of the Service at this port covering the period from July 1, 1901, to September 15, 1901, inclusive, the same being supplemental to the report transmitted under date of August 9, 1901:

Statistics of the Service at Naples.

Month.	Vessels inspected.	Pieces of baggage inspected.	Pieces of baggage disinfected.	Emigrants inspected.
1901.				
July	12	1,025	6,233	5,256
August	19	1,595	10,056	7,860
September 1 to 15	4	523	2,408	2,076
Total	35	3,143	18,697	15,192

Number of rejections advised for the following causes:

Trachoma	403
Favus	79
Hernia	61
Senility	13
Ringworm	19
Smallpox	0
Measles	4
All other causes	79
Total	658

Proportion of rejections advised to emigrants inspected, 4.35 per cent.

Respectfully,

J. M. EAGER,
Passed Asssstant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

DIVISION OF DOMESTIC QUARANTINE.

REPORT OF THE DIVISION OF DOMESTIC QUARANTINE.

J. H. WHITE,
Surgeon, U. S. Marine-Hospital Service, in charge.

OPERATIONS AT DOMESTIC NATIONAL QUARANTINES OF THE UNITED STATES DURING THE FISCAL YEAR.

During the year there were 4,729 vessels inspected and 366 vessels disinfected at national quarantine stations. At the close of the fiscal year the Marine-Hospital Service owned 13 complete maritime quarantine stations and controlled 21 stations where inspection of incoming vessels is conducted by officers of the Service.

Subjoined is a table of transactions for the Service as a whole, followed by the individual reports of the officers in command of each station:

Name of station.	Vessels—		Number inspected.	
	Inspected.	Disinfected.	Crew.	Passengers.
Reedy Island	1,074	7	35,128	17,125
Delaware Breakwater	140			
Cape Charles	455	26		
Cape Fear	74	7		
Savannah	340	50	7,005	107
South Atlantic	83	28		
Brunswick	150	28		
Gulf	124	97		
San Diego	145	4		
San Francisco	1,025	62	52,034	71,048
Columbia River	140	5		
Port Townsend (two supplemental)	794	52	29,955	35,233
Pascagoula, Miss	127			
Alexandria, Va.	9			
Eureka, Cal	7			
San Pedro, Cal	8			
Los Angeles, Cal	34			
Total (19 ports)	4,729	366		

REPORTS OF TRANSACTIONS.

REEDY ISLAND QUARANTINE. POST-OFFICE ADDRESS, VIA PORT PENN, DEL.

[Report of the medical officer in command, Asst. Surg. T. F. RICHARDSON. Assumed command under official orders of November 24, 1899.]

REEDY ISLAND QUARANTINE,
Via Port Penn, Del., July 1, 1901.

SIR: I have the honor to submit the following report of the quarantine transactions at this station for the fiscal year ending June 30, 1901:

Vessels inspected and passed	1,057
Vessels spoken and passed	17
Vessels disinfected	7
Number members in crews inspected	35,128
Number passengers inspected	17,125

Respectfully,

T. F. RICHARDSON,
Assistant Surgeon, Marine-Hospital Service, in Command.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

DELAWARE BREAKWATER QUARANTINE. POST-OFFICE ADDRESS, VIA LEWES, DEL.

[Report of the medical officer in command, Asst. Surg. C. H. LAVINDER. Assumed command under official orders of March 8, 1901.]

DELAWARE BREAKWATER, DELAWARE, *July 15, 1901.*

SIR: I submit below a summary of the operations at this station during the fiscal year ending June 30, 1901:

As will be seen, there is some decrease in the number of vessels boarded during the year as compared with that of last year. The reason for this decrease lies in the fact that the demand for tonnage occasioned by the continuance of the South African war takes many vessels away that would otherwise come here in ballast for orders, and also owing to the fact that vessels are now boarded at Reedy Island until 10 o'clock, thus allowing vessels which came here in the afternoon for boarding to now reach Reedy Island and be boarded there before 10 p. m.

Vessels boarded and inspected	140
Vessels detained for completion of period	0
Vessels remanded for disinfection	0
Persons detained in quarantine	23

Respectfully,

C. H. LAVINDER,
Assistant Surgeon, Marine-Hospital Service, in Command.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

ALEXANDRIA, VA., INSPECTION STATION.

[Acting Asst. Surg. ARTHUR SNOWDEN in charge.]

ALEXANDRIA, VA., *August 3, 1901.*

SIR: In reply to your letter asking for a summary of the number of vessels inspected and disinfected at this station during the year ending June 30, 1901, I have the honor to state there were 9 vessels inspected and none disinfected.

Respectfully,

ARTHUR SNOWDEN,
Acting Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

CAPE CHARLES QUARANTINE. POST-OFFICE ADDRESS, FORT MONROE, VA.

[Boarding and disinfection ship, *Jamestown*, Hampton Roads; hospital, and detention barracks, Fishermans Island, off Cape Charles, Virginia.]

[Report of the medical officer in command, P. A. Surg. J. A. NYDEGGER. Assumed command under official orders of March 11, 1901; Asst. Surg. C. W. WILLE in temporary command.]

CAPE CHARLES QUARANTINE,
Fort Monroe, Va., July 25, 1901.

SIR: Referring to Bureau letter (WPW–AMW) dated July 24, 1901, I have the honor to transmit herewith the following report of sanitary transactions at this station for the year ended June 30, 1901.

Vessels inspected and passed	455
Vessels disinfected	26
Total	481

Respectfully,

C. W. WILLE,
Assistant Surgeon, M. H. S., in Temporary Command.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

WASHINGTON, N. C., INSPECTION STATION.

[Acting Asst. Surg. JOHN C. RODMAN in charge.]

WASHINGTON, N. C., *August 4, 1901.*

SIR: In reply to letter dated August 2, asking for summary of vessels disinfected and inspected at this station for year ending June 30, 1901, I beg leave to state that there have been no transactions at this station during period named.

Respectfully,

JOHN C. RODMAN,
Acting Assistant Surgeon.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

NEWBERN, N. C., INSPECTION STATION.

[Acting Asst. Surg. R. S. PRIMROSE in charge.]

QUARANTINE STATION,
Newbern, N. C., August 5, 1901.

SIR: In reply to circular letter of Surgeon White, of August 2, instant, I would state there have been no vessels boarded nor disinfected during year ending June 30, 1901. I did board several vessels that stopped at quarantine, but it was on account of those vessels' signals being mistaken.

Very respectfully,

R. S. PRIMROSE,
Acting Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

CAPE FEAR QUARANTINE STATION, POST-OFFICE ADDRESS, SOUTHPORT, N. C.

[Report of the medical officer in command, Asst. Surg. T. B. McClintic. Assumed command under official orders of March 8, 1900.]

CAPE FEAR QUARANTINE STATION,
Southport, N. C., June 30, 1901.

SIR: I have the honor to report the following sanitary transactions at this station during the fiscal year ending June 30, 1901:

There arrived at this station during the year 56 sailing vessels and 25 steamships, making a total of 81 vessels. Of this number 72 were inspected and passed, 2 spoken and passed, and 7 disinfected and held for observation, 2 of which were from plague-infected ports and 5 from ports infected with yellow fever.

Respectfully,

T. B. MCCLINTIC,
Assistant Surgeon, M. H. S

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

SAVANNAH QUARANTINE, SAVANNAH, GA.

[Report of the medical officer in charge, Acting Asst. Surg. W. J. LINLEY.]

SAVANNAH QUARANTINE,
Savannah, Ga., July 20, 1901.

SIR: I have the honor to submit the following report of the transactions at this station for the fiscal year ending June 30, 1901:

Three hundred and ninety vessels, carrying 7,005 seamen and 107 passengers, were boarded and inspected; 324 of these passed up to Savannah, 16 put to sea, and 50 were detained for disinfection. Twenty-eight vessels were boarded in Tybee Roads; 24 of these were inspected and passed and 4 held subject to quarantine regulations; the latter sailed for other ports, and 12 of those inspected and passed put to sea.

One vessel, from Campeche, was allowed to take water and provisions in quarantine. Thirteen vessels were held for instructions from the Bureau; 10 of these were released and 3 disinfected. Eight vessels were given pratique by virtue of having been disinfected at their ports of departure; 3 were disinfected at Baltimore, 3 at Cuban ports, 1 at Rio, and 1 at Honolulu. Three vessels were held from one to twenty-four hours in order that specimens of blood and sputum from cases of sickness aboard might be collected and examined.

Nationality and class of vessels boarded during year.

Class.	English.	Swedish.	Norwegian.	Danish.	Portuguese.	Russian.	Italian.	Belgian.	German.	Austrian.	Spanish.	American.	Total.
Steamships	113	......	7	3	......	......	2	13	7	4	5	1	155
Ships	1	......	6	......	......	......	3	......	3	......	......	1	14
Barks	4	12	80	1	1	3	36	......	12	3	2	4	158
Barkentines	7	......	......	......	......	......	1	......	......	......	1	......	9
Brigs	......	......	......	......	......	......	1	......	1	......	......	......	2
Brigantines	......	......	......	......	......	......	......	......	......	2	......	1	3
Schooners	11	......	......	......	......	......	......	......	......	1	......	27	39
Yachts	1	......	......	......	......	......	......	......	......	......	......	2	3
Tugs	......	......	......	......	......	......	......	......	......	......	......	4	4
Sloops	......	......	......	......	......	......	......	......	......	......	......	1	1
River steamers	......	......	......	......	......	......	......	......	......	......	......	2	2
Total	137	12	93	4	1	3	43	13	23	10	8	43	390

Nationality and class of vessels held for disinfection.

Class.	British.	Swedish.	Norwegian.	Italian.	Austrian.	American.	Total.
Steamships	5	......	......	......	......	......	5
Ships	1	......	......	......	......	......	1
Barks	2	3	8	1	1	2	17
Barkentines	1	......	......	......	......	......	1
Brigantines	......	......	......	......	2	......	2
Schooners	5	......	......	......	......	16	21
Tugs	......	......	......	......	......	1	1
Sloops	......	......	......	......	......	1	1
River steamers	......	......	......	......	......	1	1
Total	14	3	8	1	3	21	50

The average period of detention for vessels disinfected was 7-14/50 days; this apparently short detention period is partly explained by the fact that a good many vessels were stopped, during the open season, simply for discharge of ballast and disinfection. Three thousand five hundred and fifty tons of sand and stone ballast were discharged during the year.

Countries from which vessels held under quarantine restrictions cleared.

Brazil	10	Martinique	1
Cuba	16	Yucatan	3
United States of Colombia	1	United States	7
Costa Rica	1	Wales	1
Porto Rico	2	Scotland	1
Guadeloupe	4	South Africa	2
Guiana	2	Argentina	3
Barbados	1		

Nature of ballast brought by detained vessels.

Sand	16	Rubbish	1
Rock	4	Light	19
Sand and stone	1	Water	5

Nature of cargoes brought by detained vessels.

Old iron	1
Vegetables	1
Cotton seed	2

Three suspected and 2 smallpox infected vessels, remanded to this station from Savannah by the surgeon in charge at that port, were treated during the year. In connection with these, 28 suspects were detained fourteen days for observation. One of the suspects developed the disease, but as this was a child who had been greatly exposed, and had therefore been isolated with the original case, the others were not exposed to a second focus of infection. The cases were isolated and treated at a camp established at the old quarantine station, about half a mile from the station, while the suspects were held under observation at the station proper.

W. J. Linley,
Acting Assistant Surgeon, M. H. S.

The Surgeon-General Marine-Hospital Service.

SOUTH ATLANTIC QUARANTINE; POST-OFFICE ADDRESS, INVERNESS, GA.; TELEGRAPHIC ADDRESS, VIA DARIEN, GA.

[Report of the medical officer in command, P. A. Surg. H. S. Cumming. Assumed command under official orders of May 15, 1899.]

South Atlantic Quarantine Station, *July 2, 1901.*

Sir: I have the honor to report the following sanitary transactions at this station during the fiscal year ending June 30, 1901:

During the fiscal year 111 vessels, with a net tonnage of 104,566.39, arrived at this station. Of this number 7 steamships, with net tonnage of 12,690.90, and 76 sailing vessels, with net tonnage of 67,606.37, were inspected and passed, and 24 sailing vessels, with net tonnage of 16,212.12, and 4 steamships, with net tonnage of 8,057, arrived with sickness on board, history of sickness or death, or from ports infected with quarantinable disease, and were detained for disinfection, discharge of ballast, and observation.

The nationality and tonnage of vessels inspected and passed were: Sail—Norwegian 46, tonnage 43,671.78; Russian 21, tonnage 16,921.25; Dutch 3, tonnage 2,239.48; British 3, tonnage 2,905.86; Italian 2, tonnage 1,280; Swedish 1, tonnage 588. Steamships—British 5, tonnage 9,330.90; Spanish 2, tonnage 3,360.

The countries and ports of departure of the vessels passed, with number of vessels from each, is as follows: Great Britain—47 sail, tonnage 43,870.03; steamships 3, tonnage 5,144.90. Netherlands 7, tonnage 5,240.63. Germany 4, tonnage 3,824.92. France 3, tonnage 2,466.56. Spain—3 sail, tonnage 2,423; 2 steamships, tonnage 3,986. Belgium 2, tonnage 1,774.97. Cape Town 2, tonnage 1,904.

One vessel from each of the following: Italy, 597; Russia, 1,195.37; St. Paul de Loano, 732; Algiers, 683; East London, South Africa, 747.89; Montevideo, 951; Bahia Blanca, 912; Bermudas, 284. Steamships: St. Lucia, West Indies, 2,200; Azores, 1,360.

The tonnage and nationality of vessels disinfected were as follows: American 5, tonnage 2,621; Norwegian 11 sail, tonnage 7,927; British 5 sail, tonnage 3,306; 3 steamships, tonnage 6,517; German 1 steamship, tonnage 1,540; Spanish 1 sail, tonnage 1,169.12; Italian 1 sail, tonnage 838; Portuguese 1 sail, tonnage 351.

A table showing concisely the port of departure, number of days detained, ballast removed, sickness or deaths en route or in quarantine and from what other quarantine station remanded (if remanded) is annexed.

This table shows that there have been remanded to this station 2 vessels from Fernandina and 6 vessels from Brunswick.

One vessel with a case of typhus fever arrived from Cape Town, 1 vessel from Bahia, Brazil, arrived with history of 1 death from typhus fever en route and 1 case of beriberi, and one vessel arrived from Pernambuco, Brazil, with a history of 2 cases and 2 deaths from yellow fever en route.

On the station endeavor is being made to prevent the malarial fevers by drainage, mosquito bars and screens, and removal of underbrush. In another letter authority to screen the hospital is requested.

Respectfully,

Hugh S. Cumming,
Passed Assistant Surgeon, M. H. S.

The Surgeon-General Marine-Hospital Service.

BRUNSWICK QUARANTINE, BRUNSWICK, GA.

[Report of the medical officer in charge, Acting Asst. Surg. R. E. L. Burford.]

Brunswick, Ga., Quarantine Station, *July 27, 1901.*

Sir: The following is a report of the transactions of the Service at this station during the year ended June 30, 1901:

One hundred and fifty vessels from foreign ports were inspected and passed. Twenty-eight vessels from foreign ports were detained and disinfected. The greater number of those disinfected were from the West Indies, mainly Cuba. Thirteen were from the port of Habana, 2 from Cienfuegos, 2 from Matanzas, and 1 from Cardenas. Three were from San Juan, P. R., and 1 each from Buenos Ayres, Port Natal, East London, Cape Town, Liverpool, and Maceo, Brazil. Two vessels were remanded to South Atlantic Station on account of suspected sickness on board.

No quarantinable disease appeared on board any vessel while in quarantine or while in this port. The health of the port has been excellent.

Respectfully,

R. E. L. Burford,
Acting Assistant Surgeon, M. H. S.

The Surgeon-General Marine-Hospital Service.

GULF QUARANTINE; LOCATION, SHIP ISLAND, MISSISSIPPI; POST-OFFICE ADDRESS, BILOXI, MISS.

[Report of the medical officer in command, Surg. P. C. Kalloch. Assumed command under official orders of December 28, 1898.]

Gulf Quarantine Station, *July 27, 1901.*

Sir: In compliance with Bureau letter of the 24th instant, I have the honor to make the following report of sanitary work at this station during the fiscal year ended June 30, 1901:

Vessels disinfected during the year	97
Vessels inspected and passed	124

There were but 3 cases of infectious disease treated at the station during the year. These were 3 cases of yellow fever from the Norwegian steamship *Bodo* from Bocas del Toro.

The only other vessel arriving here during the year, supposed to be infected, was the German bark *C. Paulson*, giving a history of 6 deaths from yellow fever in Para, and 1 en route.

There have been no cases of infectious illness other than those named above at the station.

Respectfully,

P. C. Kalloch,
Surgeon, M. H. S.

The Surgeon-General Marine-Hospital Service.

PASCAGOULA, MISS., INSPECTION STATION.

[Report of Acting Asst. Surg. B. F. DUKE in charge.]

PASCAGOULA, MISS., *August 6, 1901.*

SIR: I have the honor to report 127 vessels inspected and passed at this port during the year ended June 30, 1901. No disinfection has been done. This does not include vessels visited and sent to Gulf quarantine.

Respectfully,

B. F. DUKE,
Acting Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

SAN DIEGO QUARANTINE, SAN DIEGO, CAL.

[Report of the medical officer in charge, Acting Asst. Surg. W. W. MCKAY.]

SAN DIEGO QUARANTINE STATION,
San Diego, Cal., July 30, 1901.

SIR: I have the honor to submit herewith annual report of the transactions of this station for the fiscal year ending June 30, 1901.

During this period vessels were inspected as follows, most of them being steamers:

From Mexican coast ports	114
From Hongkong, Moji, Kobe, Yokohama, Honolulu	13
From Hamburg, via Central and South American and Mexican ports	7
From London	1
From Valparaiso	3
From British Columbia	7
From Australia	3
From Antwerp	1
Total	149

Of this number 145 were inspected and passed; 2 were held for bathing of Asiatic passengers and crew and disinfection of baggage and bedding; 1 was held for necropsy of member of Asiatic crew who had died just before the steamer entered the harbor, also for cleansing and disinfection of forecastle, bathing of passengers and crew, and disinfection of baggage and bedding; 1 was held fifteen days for complete disinfection, lighterage of cargo, immunization of passengers and crew with antipeste serum, etc., on account of 6 deaths having occurred aboard from bubonic plague.

Respectfully,

W. W. MCKAY,
Acting Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

LOS ANGELES QUARANTINE STATION.

[Report of medical officer in command, Asst. Surg. W. C. BILLINGS (temporary).]

LOS ANGELES, CAL., *August 12, 1901.*

SIR: Replying to Bureau letter of August 2, 1901, relative to the number of vessels inspected and the number disinfected at this station for the fiscal year ending June 30, 1901, I have the honor to report as follows:

Vessels inspected and passed, 34; none were disinfected.

Respectfully,

W. C. BILLINGS,
Assistant Surgeon, M. H. S., in Temporary Charge.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

SAN PEDRO, CAL., INSPECTION STATION.

[Report of Acting Asst. Surg. W. A. WELDON, in charge.]

SAN PEDRO, CAL., *August 12, 1901.*

SIR: In reply to your letter dated August 2, 1901, requesting a report of the number of vessels inspected and the number of vessels disinfected at this station during the year ending June 30, 1901, would report as follows:

Vessels inspected, 8; disinfected, none.

Respectfully,

WM. A. WELDON,
Acting Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

SAN FRANCISCO QUARANTINE, ANGEL ISLAND, CAL.

[Report of the medical officer in command, Surg. D. A. CARMICHAEL. Assumed command under official orders of April 27, 1901.]

SAN FRANCISCO QUARANTINE STATION,
Angel Island, Cal., July 30, 1901.

SIR: I have the honor to submit the following report of transactions for this station for the fiscal year ending June 30, 1901:

During the year a total of 1,087 vessels were inspected—551 steamers and 536 sailing vessels. These carried in crews 52,034 and passengers 71,048, a total of 123,082 people inspected. The nationalities of the vessels inspected were as follows:

Nationality.	Steam.	Sail.
American	321	384
British	124	110
Norwegian	54	....
German	19	8
French	....	25
Japanese	14	....
Chilean	8	....
Austrian	7	....
Miscellaneous	4	9

Forty-eight vessels were held for discharge of passengers and crew for bathing and disinfection of their effects, and 14 vessels were held for disinfection of the vessel and cargo, making a total of 62 vessels detained in quarantine. Of the passengers inspected there were 16,622 cabin passengers and 54,426 steerage; passengers disinfected, 49 were cabin and 3,523 steerage. The diseases for which the vessels were held in quarantine were principally smallpox and suspected plague.

Five thousand eight hundred and forty-seven immigrants were examined physically; 5,777 passed; 70 were certified for deportation—60 were deported and 10 admitted. The diseases and defects for which rejections were made were as follows:

Gonorrhea	5
Trachoma	13
Chronic enlargement of the testacles	5
Tubercle of the lungs	6
Blindness	3
Hydrocele	1
Lipoma of the back	1
Ulcer of the cornea	1
Soft chancre of the penis	4
Varicose veins	1
Syphilis	7
Hernia	2
Deafness	1
Loss of right leg	1
Chronic conjunctivitis	2
Tumor of the right eye undetermined	1
Gonorrheal ophthalmia	1
Scabies	14
Melancholia	1

The army detention camp on the eastern side of the island was used but once during the past year, for the isolation of one battalion of the Eleventh Infantry on account of smallpox. At the close of the period of detention, May 1, 1901, the soldiers and hospital-corps men were removed to the quarantine station, bathed, and their effects disinfected and transported to the city by the quartermaster's department. The camp was then thoroughly cleaned, the wooden buildings and tent floors disinfected, and the tents which had been in use sterilized by steam at the quarantine station. The army headquarters were then notified that the detention camp was then clean and ready for transfer to the quartermaster's department.

Respectfully,

D. A. Carmichael,
Surgeon, M. H. S.

The Surgeon-General Marine-Hospital Service.

EUREKA, CAL., INSPECTION STATION.

[Report of Acting Asst. Surg. B. Y. Harris in charge.]

Eureka, Cal., *August 12, 1901.*

Sir: I have the honor to inform you that I am in receipt of your letter of August 2, initials upper left "Amw," relative to forwarding a summary of vessels inspected and disinfected during the year ending June 30, 1901, and report as follows: That 7 vessels have been inspected and none disinfected during the above-mentioned period.

Respectfully, yours,

B. Y. Harris,
Acting Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

COLUMBIA RIVER QUARANTINE; POST-OFFICE ADDRESS, ASTORIA, OREG.

[Report of the medical officer in command, Asst. Surg. Baylis H. Earle. Assumed command under official orders of November 28, 1900.]

Columbia River Quarantine Station,
Astoria, Oreg., July 29, 1901.

Sir: I have the honor to submit the report of the transactions of the Service at this station during the fiscal year ending June 30, 1901:

Sanitary.—One hundred and forty vessels of all classes were inspected, and passed and the oriental crews of 5 steamships were bathed and their effects and the forecastles and cabins occupied by them disinfected. Of these 5 steamships 4 were from Hongkong and other Chinese ports and 1 from Yokohama, Japan. The reasons for disinfection in these cases were the prevalence of plague in China and the fact that these vessels had on board oriental members of the crews, many of whom in each case were Chinese who had not been inspected and whose effects had not been examined by officers of the Service at the ports of departure. In cases where the bills of health showed that the oriental crews had been either inspected or bathed and their effects either examined or disinfected by officers of the Service at the ports of departure, these crews were again examined, and on their being found healthy the vessels were allowed to proceed to their destinations. No vessel entered during the year having had on board disease of a quarantinable nature.

Personnel.—The following-named attendants received probationary appointments for periods of six months each:

	Per month.
Thaddeus S. Trullinger, on October 26, 1900	$75
Ole Estoos, on April 1, 1901	50
Frank E. Williams, on April 1, 1901	40
Joe Johnson, on April 16, 1901	40
Mrs. Anne Abraham, on May 1, 1901	30

Attendant Trullinger is detailed as engineer, Attendant Estoos as carpenter, Attendant Williams as laborer, Attendant Johnson as launderer, and Attendant Abraham as cook and housekeeper. They have all been trained to assist in the disinfection of vessels, their passengers and baggage and their cargoes.

Attendant Trullinger, having served satisfactorily for six months, was recommended for and received an absolute appointment on April 26, 1901.

Disciplinary.—On January 18, 1901, the following-named persons were reported to the United States attorney at Portland, Oreg., for willful violation of the United States quarantine laws and regulations: Jack Reid, owner and master of launch *Elf*, for, on December 31, 1900, trespassing on the grounds of the Columbia River quarantine station; for, on January 13, 1901, meeting and communicating with the German steamship *Milos* before the quarantine inspection; and for, on January 18, 1901, boarding the French bark *La Rochefoucauld* before the lowering of the yellow flag. R. M. Stuart, master of launch *Hester*, for, on January 18, 1901, boarding the French bark *La Rochefoucauld* before the lowering of the yellow flag. J. Niemann, captain of German steamship *Milos*, for, on January 13, 1901, allowing communication with his vessel before the quaratine inspection.

On January 25, 1901, a United States deputy marshal arrived down from Portland, Oreg., and placed the three men under arrest. They were arraigned before the United States commissioner, who placed each of them under $250 bonds to appear for trial at the next term of the Federal court in Portland, Oreg.

The cases against the men were finally discontinued on their promise, and that of their employers and attorneys, that they would thereafter carefully observe the quaratine laws and regulations. Since then they have given no trouble.

Miscellaneous.—The clinical microscope and other articles on requisition No. 133, approved October 23, 1900, were received at various times during December, 1900, and January, February, and July, 1901. The furniture, cooking utensils, bedding, clothing, heating stoves, range, and miscellaneous articles on requisition No. 139, approved October 26, 1900, were received at various times during January, February, March, April, and July, 1901.

The quarantine steamer *Electric* was sold by its owner on February 11, 1901, and delivered on May 17, 1901. The steamer *Eclipse* was substituted for it until May 21 and then the steamer *Wilavis* until June 30, 1901. Both the vessels substituted gave entire satisfaction. The owner was allowed to sell his vessel under the contract, provided he would substitute another equally as good.

Respectfully,

BAYLIS H. EARLE,
Assistant Surgeon, M. H. S., in Command of Station.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

HOQUIAM, WASH., INSPECTION STATION.

[Report by T. C. FRARY, acting assistant surgeon in charge.]

PORT OF HOQUIAM, WASH., *August 8, 1901.*

SIR: I have the honor of acknowledging receipt of letter dated August 2 by J. H. White, surgeon, Marine-Hospital Service, in charge of division, to forward at once a summary of the number of vessels inspected and the number of vessels disinfected at this station during the year ending June 30, 1901.

As I have not up to the present time received any blanks I take the liberty of forwarding in this manner the inclosed list of vessels arriving in Grays Harbor, which have been inspected and discharged in free pratique at this station during the year ending June 30, 1901. There has been no vessel disinfected during the year ending June 30, 1901.

The following vessels have been inspected, to wit:

* * * * * * *

Making in all 25 vessels from foreign ports.

Respectfully,

T. C. FRARY,
Acting Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

PORT TOWNSEND QUARANTINE, PORT TOWNSEND, WASH.

[Boarding station, Port Townsend; disinfecting station, Diamond Point.]

[Report of the medical officer in command, Asst. Surg. M. H. Foster. Assumed command under official orders of July 22, 1899.]

Quarantine Station,
Port Townsend, Wash., July 8, 1901.

Sir: I have the honor to make the following report of transactions at this station during the fiscal year ended June 30, 1901:

There were 771 vessels inspected with their complement of 57,165 souls. Of these 411 were steam vessels and 360 sailing. The crews numbered 27,220, the cabin passengers 16,724, and the steerage 13,221. Fifty-two of these vessels with their personnel were sent to the quarantine station and disinfected in part or whole. Three hundred and thirty-seven persons were given the immigrant inspection, and 200 immigrants seeking admission from Victoria, British Columbia, on local steamers were vaccinated. A certain proportion of the above crews and passengers were Orientals, and were examined, stripped, for glandular enlargement. A considerable amount of Chinese food stuffs was disinfected during the year. The disinfection was directed chiefly against vessels from plague-infected ports and vessels arriving infected with smallpox. One vessel arrived which had had a death from plague en route, but which had been disinfected by the Japanese authorities. Fourteen cases of smallpox were treated in the quarantine hospital with no deaths. One steamship came from Alaska for quarantine procedures, smallpox having broken out on the voyage up. A considerable number of vaccinations were performed on smallpox suspects on infected vessels. Supervision was exercised over quarantine functions performed by officers of this Service at Tacoma, Seattle, and Port Angeles, Wash. The reports of this work are respectfully inclosed.

Respectfully,

M. H. Foster,
Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

TACOMA, WASH., INSPECTION STATION.

[Report of Acting Asst. Surg. F. J. Schug, in charge.]

Tacoma, Wash., *July 2, 1901.*

Sir: I have the honor to report the following transactions at this station during the fiscal year ending June 30, 1901, of Chinese food stuffs and merchandise disinfected, viz:

August 30, 1900, 2,371 packages, per S. S. *Goodwin;* October 9, 1900, 556 packages, per S. S. *Duke of Fife;* October 13, 1900, 367 packages, per S. S *Olympia;* October 24, 1900, 549 packages, per S. S. *Glenogle*, all from Hongkong. December 3, 1900, 1 box dried fish and 1 box water chestnuts from Seattle, per steamer *Seahome.* December 17, 1900, 63 packages, per S. S. *Olympia*, from Hongkong.

Respectfully,

F. J. Schug,
Acting Assistant Surgeon, Marine-Hospital Service.

Asst. Surg. M. H. Foster,
In Command, Port Townsend Quarantine Station, Port Townsend, Wash.

SEATTLE, WASH., INSPECTION STATION.

[Report of Acting Asst. Surg. Chas. B. Ford, in charge.]

Seattle, Wash., *July 3, 1901.*

Sir: I have to report that the following quarantine work has been transacted at this station during the fiscal year ended June 30, 1901:

Steamers inspected	46
Total number of crew	2,657
Total number of passengers	5,252
Sailing vessels inspected	10

Total number of crew	78
Total number of passengers	36
Vessels sent to Port Townsend for disinfection	4
Packages of Chinese food stuffs disinfected	173
Immigrants inspected	756

Respectfully,

CHAS. B. FORD,
Acting Assistant Surgeon, Marine-Hospital Service.

Asst. Surg. M. H. FOSTER,
In Command, Puget Sound Quarantine, Port Townsend, Wash.

PORT ANGELES, WASH., INSPECTION STATION.

[Report of F. S. LEWIS, acting assistant surgeon, in charge.]

Vessels inspected (steam, 2; sail, 18)	20
Crew	348
Passengers	7
Remanded to quarantine	0

DUTCH HARBOR QUARANTINE—DUTCH HARBOR, ALASKA.

[Report of Asst. Surg. F. J. Thornbury, in command.]

PORT TOWNSEND, WASH., *November 16, 1901.*

SIR: (Through medical officer in command.)

I am in receipt of Bureau letter (A. M. W., W. P. W., J. H. W.), November 8, 1901, to Assistant Surgeon Moore, and which was referred to me by him. The letter requests a report of the quarantine transactions at Dutch Harbor, Alaska, during the past season.

The vessels which I inspected at Dutch Harbor between June 9 and October 31, 1901, were reported in the usual way. The total number of arrivals for the season amounted to 180, but these were nearly all coastwise, between San Francisco, Seattle, and Nome, calling at Dutch Harbor to coal.

The above number of arrivals includes the revenue cutters, and geodetic and coast survey vessels which made Dutch Harbor their base and were in and out at intervals of a few weeks during the season.

Merchant vessels to and from the Orient have gone to Dutch Harbor to coal exceedingly rarely.

There were no quarantinable diseases at the port during the season and no vessels were disinfected.

Respectfully,

F. J. THORNBURY,
Assistant Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

NOME, ALASKA, INSPECTION STATION.

Eighty-six vessels inspected from May 18, 1901, to date.

TRANSFER OF FLORIDA QUARANTINE TO THE NATIONAL GOVERNMENT.

After considerable correspondence between the State health officer of Florida and the Bureau and a conference with the governor of the State, an agreement was finally arrived at on July 21, 1901, by which on August 1, 1901, the State authorities of Florida transferred their quarantine functions to the Marine-Hospital Service and leased their quarantine stations to this Service for a period of three years, at a nominal rental. The service, under the provisions of section 8 of the act of Congress approved February 15, 1893, undertook to operate these quarantines in like manner as the quarantine at Savannah, Ga., was accepted during the previous year.

One of the stations, that at Mullet Key, was purchased outright, under the act of Congress of June 6, 1900, appropriating $125,000 to provide quarantine stations at Mullet Key and at or near Key West in lieu of the quarantine station at Dry Tortugas, which had been surrendered to the Navy as a coaling station.

Recommendations for the purchase of all of these stations, under the provisions of the agreement and lease entered into with the authorities of the State of Florida, copy of which lease is appended hereto, were made to Congress, and it is believed that the appropriation will be obtained, when it is the intention to complete the purchase and equipment of these stations, making such additions and alterations as are necessary to make six of them, namely, Fernandina, Miami, Key West, Mullet Key, Carrabelle, and Pensacola, amply competent to care for the needs of commerce at any of these ports. The remaining stations, namely, those at Mayport, at the mouth of the St. Johns River, near Punta Rassa, and Punta Gorda, Cedar Keys, and Apalachicola, do not need complete disinfecting appliances, but will be used as inspecting stations only.

The acquisition of these stations adds an important link to the already long chain of national quarantine stations, this coast embracing some of the most important points, in so far as a sanitary guard line is concerned, on the whole coast of the United States. The Service's responsibility is therefore largely increased by the assumption of quarantine functions on the Florida coast.

Appended below are copies of the agreement made July 20, 1901. In accordance with the terms of this agreement, a lease will doubtless be drawn up and signed for rental of these quarantines by the Service.

AGREEMENT BETWEEN THE U. S. TREASURY DEPARTMENT (MARINE-HOSPITAL SERVICE) AND THE STATE BOARD OF HEALTH OF FLORIDA, AND THE BOARD OF COMMISSIONERS OF STATE INSTITUTIONS OF FLORIDA.

1. The Treasury Department (Marine-Hospital Service) will lease the quarantine sterilizing, and inspection stations belonging to and now operated by the State of Florida, with the exception of Tampa Bay quarantine station (Mulley Key), for three years, at a nominal sum of one dollar ($1) per annum.

2. Immediately thereafter there shall be an appraisement of the value of the property belonging to the State at each quarantine station. This appraisement to be made by a representative of the Treasury Department, a representative of the State board of health of Florida, and a third person who shall be agreed upon by the State board of health and the Treasury Department.

3. The Treasury Department agrees to recommend to Congress appropriations sufficient to pay for said property in accordance with said valuation, and the State board of health and board of commissioners of State institutions will transfer the said property to the Treasury Department on receipt of said amounts.

4. Should the Treasury Department (U. S. Marine-Hospital Service) control, by lease or otherwise, be discontinued, then the improvements made by the United States Government will be taken by the State and paid for at a valuation to be agreed upon or determined by arbitration; provided, that reimbursement shall be made only for such additions for improvements as have been agreed upon in writing by the State board of health.

5. The United States Treasury Department, through the U. S. Marine-Hospital Service, will continue, with the approval of the Civil Service Commission, the employment of the sanitary inspectors and employees now connected with the stations, unless there be objections to their efficiency or competency.

6. In the event of the acceptance of this agreement, the Treasury Department (U. S. Marine-Hospital Service) will recommend to Congress appropriations for the immediate improvement of the stations, to secure the most expeditious and thorough service at all points.

7. The United States Treasury Department (Marine-Hospital Service) will appoint the State health officer of Florida a sanitary inspector of the Marine-Hospital Service, with advisory and recommendatory functions in the management and operation of the quarantine and inspection stations thus leased or transferred, and will furnish, when and as often as may be deemed necessary, transportation for the purpose of inspecting said stations, and also making inventories and valuations of the various plants it is proposed to lease or transfer. The traveling expenses of the said sanitary inspector, when on quarantine duty directed by the Department (Marine-Hospital Service), will be paid upon duly rendered vouchers.

8. Congress having made an appropriation for the establishment of a quarantine station at Mullet Key, the United States Treasury Department will entertain a proposition to pay the State of Florida for the quarantine plant now at Mullet Key.

Washington, D. C., July 20, 1901.

Accepted.

L. J. GAGE, *Secretary of the Treasury.*

Accepted July 16, 1901.

W. S. JENNINGS, *Governor, and President B. I.,*
WM. H. REYNOLDS, *Comptroller,*
J. B. WHITFIELD, *State Treasurer,*
B. E. MCLIN, *Commissioner of Agriculture,*
W. B. LAMAR, *Attorney-General,*
Board of Commissioners of State Institutions.

Attest:

C. H. DICKINSON, *Secretary of the Board.*

Accepted.

E. M. HENDRY,
President State Board of Health of Florida.

Attest:

JOSEPH Y. PORTER,
[SEAL.] *Secretary State Board of Health of Florida, State Health Officer.*

[Extract of copy of minutes of meeting of the State board of health of Florida while in called session at Tallahassee, Fla., July 16, 1901.]

RESOLUTION ADOPTED BY THE STATE BOARD OF HEALTH OF FLORIDA WHILE IN CALLED SESSION AT TALLAHASSEE., FLA., JULY 16, 1901.

Resolved by the State board of health of Florida, That it hereby accepts, agrees to, and authorizes the sale of Mullet Key quarantine station, subject to the concurrence of the board of commissioners of State institutions of Florida.

Resolved, Second, That the board of commissioners of State institutions be advised of the action of the board of health in the premises, and that the board of commissioners of State institutions be, and are hereby, requested to join in the transfer or conveyance of the title to said plant and property to the Treasury Department, to the end that these negotiations may be completed without delay, and that a copy of these resolutions be furnished to the board of commissioners of State institutions with the earnest request that said board act favorably thereon as early as possible.

Resolved further, That Hon. E. M. Hendry, president State board of health, be, and he is hereby, appointed as representative on the part of the State board of health, to appraise said quarantine plant at Mullet Key, with the representative of the United States Treasury Department (U. S. Marine-Hospital Service), and to do and perform all necessary acts in accordance herewith, in order to sell and transfer said plant to the Treasury Department on behalf of the State board of health of Florida, as herein contemplated; and be it further

Resolved, That upon the completion and execution of bill of sale of Mullet Key station, that the State board of health of Florida accepts and agrees to enter into the following agreement subject to approval and concurrence of the board of commissioners of State institutions, which is respectfully requested; which agreement is identified as the agreement prepared as of the date of May 17, 1901, and amended July 10, 1901, which reads as follows: [Here was inserted the foregoing agreement.]

True copy.

Attest:

[SEAL.] JOSEPH Y. PORTER, *Secretary.*

RESOLUTION ADOPTED BY THE BOARD OF COMMISSIONERS OF STATE INSTITUTIONS WHILE IN SESSION AT TALLAHASSEE, FLA., JULY 16, 1901.

Resolved by the Board of Commissioners of State institutions of Florida, That the request of the State board of health relative to the sale and transfer of the property of the State of Florida at Mullet Key quarantine station to the Treasury Department of the United States, be granted and concurred in, and that the board cause to be executed good and sufficient bills of sale or conveyance of all of said property on quarantine station at Mullet Key to the Treasury Department of the United States Government, for and in consideration of the sum named in said conveyance, upon request of the said State board of health.

Resolved further, That the board of commissioners of State institutions will concur in contract to lease all other quarantine stations upon terms and conditions mentioned and set forth in the foregoing agreement, prepared as of date of May 17, 1901, as amended as of date July 10, 1901, and will execute good and sufficient lease or leases, bills of sale or conveyances, of all of said properties or quarantine plants, for and in consideration of sum named in said conveyance, upon the request of the State board of health of Florida.

Attest: C. H. DICKINSON,
Private Secretary to the Governor,
and Secretary to Board of Commissioners of State Institutions.

RESOLUTION ADOPTED BY THE STATE BOARD OF HEALTH WHILE IN SECOND SESSION OF CALLED MEETING OF THE BOARD, HELD IN TALLAHASSEE, FLA., JULY 16, 1901.

Resolved, That the president and secretary of the board be authorized to execute, on behalf of the board and in connection with the board of commissioners of State institutions, such contracts, bills of sale, and other papers as may be necessary to carry into effect the agreement entered into with the Treasury Department for the sale of the Mullet Key station and the lease of the other quarantine stations of the State.

Resolved also, That the president of the board be and he is hereby authorized to designate and appoint a proper person or persons to act, and an appraiser or appraisers, with the appraisers selected by the Treasury Department, to determine the value of the quarantine stations and plants in this State which are to be *leased* to the United States Government.

True copy.

Attest:

[SEAL.] JOSEPH Y. PORTER, *Secretary.*

TEXAS-MEXICAN BORDER QUARANTINE.

On account of the continued existence of yellow fever and smallpox, as well as occasional rumors of typhus fever, in the Republic of Mexico, it has been deemed necessary to maintain continuously the land quarantines at El Paso, Eagle Pass, and Laredo, Tex., and to exercise a supervision over the entry into Texas of all persons from Mexico, and working along these lines the service has cooperated with the United States Immigration Service and with the State health authorities of Texas. The reports of the officers at the three ports named are appended hereto.

Below is a summary of the transactions on this frontier and the individual reports of the officers in charge at the stations named:

Summary of transactions, Texas-Mexican border.

	Trains inspected.	Persons inspected.	Persons detained for observation.	Sent back to Mexico.	Vaccinated.
Eagle Pass	381	15,230	18	425	98
El Paso	....	10,414	33	....	....
Laredo	730	51,430	135	....	....
Total	....	77,074	186	....	....

EL PASO, TEX.

[Report of transactions at El Paso border quarantine, by Acting Asst. Surg. E. ALEXANDER.]

EL PASO, TEX., *August 29, 1901.*

SIR: I have the honor to submit herewith a summary of transactions at this station from July 1, 1900, to June 30, 1901:

Inspection Mexican Central Railway passengers	8,018
Special inspection of passengers from City of Mexico on account of typhus fever prevailing there	270
Inspection of Rio Grande and Pacific passengers	1,519
Inspection of excursion parties from Mexico	328
Inspection of private cars from Mexico	70
Inspection of party, Mexican contingent to Pan-American Buffalo Exhibition	131
Inspection of various freight crews	78
Inspection of "Certificate of death" of bodies contained in hermetically sealed coffins shipped into United States	7
Inspection of different fruits imported from Mexico; detained in all, from infected places and on account of smallpox, three, five, and twenty days	29
Disinfection of trunks, clothing, household goods, and the belongings of immigrants	1,516
Disinfection of soiled linen imported for laundry work	19,903
Disinfection of Pullman linen from Mexico	96,046
Disinfection of 16 importations of cattle hides	5,601
Disinfection of carload of bones	4
Vaccination of immigrants, their children, and other destitutes	382

April last I was informed by passengers and Mexican Central officials that there was at that time a rather large amount of sickness in the City of Mexico and a very high death rate, and knowing that a system of sewerage was being put in and the ground torn up in every direction, I suspicioned typhus fever was prevailing there. This might be expected under the circumstances, and I commenced at once to examine passengers from the City of Mexico for the regularity of pulse and their normal temperature, which was only a precautionary measure and not a quarantine, as the American consul-general and some Mexican papers called it.

It gives me satisfaction to state that though smallpox has been prevalent in many localities in all parts of the United States, El Paso, Tex., and Juarez, Mexico, have been almost free of the disease.

Ninety-eight per cent of all the population in both cities are thoroughly vaccinated, which is certainly a very satisfactory proof of the value of vaccination. There have been a few sporadic cases of smallpox here, but they came from the lower part of Texas and New Mexico. Such, fearing to be put in the smallpox hospital, generally run away and take refuge with some lower class of Mexican families, who have no more fear of smallpox than an American mother has of measles.

Most of such cases I have quarantined in Juarez and detained them twenty days before they were admitted into the United States.

Of late some of the American laity, and not a few of physicians, call smallpox "Cuban itch." I have seen such cases, but always found every symptom of genuine smallpox. In my practice in this country I have found among cattlemen and butchers many afflicted with various ugly skin diseases, some of whom suffered from anthrax. This is the reason that I have always demanded that cattle hides be disinfected before being admitted to the United States.

Respectfully,

E. Alexander,
Acting Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

EAGLE PASS, TEX.

[Report of transactions at Eagle Pass border quarantine, by Lea Hume, sanitary inspector in charge.]

Eagle Pass, Tex., *August 26, 1901.*

Sir: In compliance with instructions of Bureau letter of 21st instant, I have the honor to make the following report of transactions for the year ended June 30, 1901:

Trains inspected	384
Persons on trains inspected	10,950
Persons inspected on Rio Grande	4,380
Persons detained in detention camp	18
Persons returned to Mexico	425
Cases smallpox developed at camp	1
Individuals vaccinated	98

Since May 2, 1901, all linen (soiled) from Mexico City has been fumigated daily.

Very respectfully,

Lea Hume,
Sanitary Inspector in Charge, Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

LAREDO, TEX.

[Report of transactions at Laredo border quarantine, by Acting Asst. Surg. H. J. Hamilton.]

Laredo, Tex., *August 28, 1901.*

Sir: I have the honor to submit herewith for annual report summary of the transactions at this station for the fiscal year ending June 30, 1901.

During this period the number of passenger trains entering from Mexico inspected was 730. One passenger coach, together with passengers, etc., refused entry on account of infection with smallpox. Passengers were taken charge of by Mexican authorities, and I cooperated with them in disinfecting coach and baggage. Number of persons passed inspection on passenger trains entering from Mexico was 24,683. Number of persons passed inspection entering from Mexico over foot and tramway bridge was 36,757. Immigrants inspected and passed, 2,024. Number of immigrants vaccinated upon inspection, 277. Number of immigrants certified to for rejection on account of physical disabilities or disease, 3. Number of persons detained at camp or refused entry on account of being recently from an infected port or district, 144. Number of trunks, valises, and bundles of baggage opened and disinfected with formaldehyde gas, 135. Two suspects with fever (American citizens) from Tampico, Mexico, were treated at camp; disease proved to be malaria. Records show 228,772 pieces of soiled linen of Pullman Company disinfected at company's expense before shipment to San Antonio, Tex., for purpose of laundry.

Respectfully,

H. J. Hamilton,
Acting Assistant Surgeon, Marine-Hospital Service.

The Surgeon-General Marine-Hospital Service.

Quarantine Decisions Regarding Chinese Food Products.

On December 13, 1900, Surgeon Kinyoun, the officer in charge of San Francisco quarantine, held in quarantine certain Chinese food products, no certificate having come with them from Asiatic ports that they were not from plague or cholera infected districts. The consignees brought suit against the quarantine officer with a view to forcing the admission of these products. The case was continued from time to time, and was finally abandoned. In the meantime it seemed desirable to have definite information with regard to the relative danger of these food products, and experiments were made as to the viability of the the plague bacillus upon certain dried products, samples being furnished to the Bureau. From the report of the acting director of the hygienic laboratory, P. A. Surg. H. D. Geddings, herewith appended, it will be seen that the dried products are considered to be but slightly dangerous. Other food products must bear the certificate of the Marine-Hospital Service officer at the Asiatic port that they were prepared in and shipped from places not infected with bubonic plague or cholera. With this certificate they are allowed to pass; otherwise they are not. The following circular telegram is explanatory of the above position:

[Telegram.]

WASHINGTON, *January 23, 1901.*

KINYOUN, *Angel Island, Cal.:*

Circular telegram. Arrange with steamship lines bringing lily bulbs, water chestnuts, yams, loam-packed eggs, and similar articles, to have them stored easily accessible on arrival. If viséd by service officers abroad, may pass; otherwise disinfect by immersion in 2 per cent formalin solution, 100 parts water.

WYMAN.

This telegram was also sent to San Diego, San Pedro, Eureka, Hoquiam, Astoria, and Port Townsend quarantines.

The restraints upon dried food products were later removed entirely, as will be seen by the following telegrams:

[Telegrams.]

ANGEL ISLAND, CAL., *July 1, 1901.*

Surgeon-General WYMAN, *Washington:*

Prohibited Chinese food products shipped by rail in bond as domestic goods, Victoria, British Columbia, to Seattle, thence by steamer *Umatilla* to San Francisco, avoiding United States quarantine regulations. Shall we reject? Urgent.

CARMICHAEL.

WASHINGTON, *July 2, 1901.*

CARMICHAEL, *Quarantine, Angel Island, Cal.:*

Replying to your telegram, July 1, concerning prohibited food products coming by rail from Vancouver to Seattle, thence by steamer to San Francisco, and requesting instructions, your telegram anticipates contemplated order modifying the regulations concerning some of these food products. From recent tests in the laboratory the Bureau is assured that dried food products such as dried ducks, dried oysters, dried cuttlefish, dried gizzards, dried gizzards in oil, and other dried products may be admitted. Moist articles, however, such as come in cans and crocks, are not included in this order of modification. Therefore you will still exclude the latter, endeavor to obtain samples of same and express to Bureau for test, informing owners it is done in interest both of safety and of commerce.

Mail copies of this telegram to Kerr and Eldridge.

WYMAN.

"Kerr and Eldridge" mentioned in preceding telegram refer to Asst. Surg. John W. Kerr, Marine-Hospital Service, stationed at Hongkong, and Acting Asst. Surg. Stuart Eldridge, service inspector at the port of Yokohama.

[Telegrams.]

ANGEL ISLAND, CAL., *October 8, 1901.*

Surgeon-General WYMAN, *Washington:*

Steamship company ask if dried Chinese food products per *Coptic*, rejected by Kinyoun October 13, 1900, can be admitted under Bureau telegram of July 2, 1901. Reply by wire.

CARMICHAEL.

WASHINGTON, *October 8, 1901.*

CARMICHAEL, *Angel Island, Cal.:*

Chinese food products which were rejected by Kinyoun may, if absolutely dry, be admitted under Bureau telegram of July 2, but moist products barred.

WYMAN.

LABORATORY REPORT ON FOOD PRODUCTS.

Following is report of acting director of the hygienic laboratory, P. A. Surg. H. D. Geddings, with regard to the dried products above mentioned:

TREASURY DEPARTMENT,
MARINE-HOSPITAL SERVICE, HYGIENIC LABORATORY,
Washington, January 11, 1901.

SIR: Referring to the restrictions which now exist, under the quarantine regulations of the United States, upon the importation of Chinese food products, flower bulbs, etc., at the port of San Francisco, Cal., the reason for the said restrictions being the fear of the introduction of the bubonic plague through the instrumentality of the said articles, I have the honor to submit the following:

In submitting his "Preliminary note on the viability of the plague bacillus," P. A. Surg. M. J. Rosenau, Marine-Hospital Service, the director of this laboratory, before giving the details of his experiments on the subject, summarized as follows: "There seem to be three factors that influence the life of the bacillus pestis in the outer world, viz, light, moisture, and temperature. The bacillus withstands quick drying very badly, as all experiments in this direction indicate. It can not live long in the sunshine. High temperatures are invariably fatal."

He then proceeds to give data showing that the bacillus at room temperature (20° to 27° C.) lived thirteen days on linen crash; four days on pine wood; eight days, when dried, on filter paper; sixty days, when kept moist, on fine sand; sixty days on linen, when moist, and the same length of time, under the same conditions, on wool, silk, and filter paper.

These experiments differed widely from results obtained on the same subject by other observers, and there is and can be no question of the thorough reliability of the observations and the value which is to be attached to them. Indeed, it can truly be said that through the observations of Dr. Rosenau there has been a vast change of sentiment on the subject of the viability of the plague bacillus and a thorough revision of the views heretofore deduced from the experiments performed prior to his.

The experiments were continued from the point where his preliminary note left off, and have been the subject of continuous observation in this laboratory for more than a year from that time, having only been brought to a conclusion within the past sixty days.

In general terms it may be said that the further observations have simply confirmed his preliminary views. The growth of the bacillus continued, reaching under various but in general favorable conditions of temperature and moisture to a period of one hundred and twenty-five days on bone dust, where moisture was preserved; ninety-seven days on crash, where moisture was preserved; ninety-six days in distilled water; ninety-seven days in tap water, and other periods too numerous here to mention, but all in general under favorable conditions of moisture and temperature.

But I would beg here to remind you that while these results are entirely beyond question, and while no effort was spared to make the conditions simulate those naturally obtaining, there were in the end very decided departures from the normal which would obtain under conditions of commerce, trade, etc.

The experiments all showed, too, that under conditions of dryness, exposure to sunlight and to temperatures above the natural, but not very elevated, the life of the bacillus was short.

Again, too, I would invite your attention to the fact that a condition which obtained in all these experiments was one very far from obtaining under normal conditions, viz, the fact of an intentional, abundant inoculation with a pure culture of the materials subjected to test, and this culture one of known activity and virulence.

A second departure from normal conditions was in the fact that all the materials receiving the abundant inoculation of the virulent pure culture were sterile. In other words, the plague bacillus was not only put to growing under the before-mentioned favorable conditions of heat and moisture, but was relieved in toto from that microbial symbiosis which in the economy of nature plays so important a part in the suppression of pathogenic organisms.

I do not think, therefore, that the valuable experiments in the laboratory, complete and painstaking though they be, should be held as establishing a standard in the case of food products where the following conditions would establish a strong dissimilarity of conditions:

(1) Food products are never intentionally inoculated with plague organisms, or, for that matter, with any others. On the contrary, no matter how careless the operator and how slovenly the method of preparation, care is exercised to protect from gross contamination. The products, it is true, may accidentally become contaminated by preparation in a dwelling where plague prevails. After preparation it may become contaminated in the warehouse or store by being "muzzled" by a rat suffering from the pneumonic form of the disease, or a plague-infected rat may nest, or even die, on the products; or the foods may be contaminated by dust containing virulent and viable plague bacilli. But granting any or all of these possibilities (nothing is said of probabilities), should the contamination take place it is at once confronted by the following condition:

(2) That all products for wear, for use in the arts, or for food are the seat of contamination by saprophytic bacteria, and that there is at once set up a conflict between the pathogene on the one hand and the saprophyte on the other, in which contests the hardier saprophyte usually comes off victorious over the more deadly but more highly organized and sensitive pathogene.

I repeat, therefore, that the conditions obtaining in exact laboratory experimentation are not applicable to and do not form an exact rule of conduct for quarantine matters, in which the normal, natural conditions obtain.

The continuation of the experiments which formed the basis for Dr. Rosenau's preliminary note leads in the main to the conclusion that if a substance is favorable for the retention of moisture, it will afford a good culture medium for the growth of the plague bacillus, unless it have in itself some inherent property which renders it unsuitable. This latter may be something added to it in the process of manufacture, as the sizing or filling in certain fabrics, or the resins or gums contained in woods, or the bacteria which find a habitat in manufactured foods.

Thus the plague bacillus failed to grow on linen crash until it had been thoroughly freed of its sizing by washing; on sawdust it lived but one day; on flannel only three days; on a piece of carpet (the effect probably of the dye) it did not grow at all.

The following food products were tried and gave the following results: On cheese it lived from thirteen to seventeen days, but this only after the cheese had been thoroughly sterilized and melted; on rice, sterilized, three days; on dried salt beef, three days; on orange peel, no growth; on figs and raisins, no growth, though subsequent experiments showed this to be due to the amount of glucose or fruit sugar contained.

Further, a staple article of Chinese food, a duck dried and smoked, was obtained, and from this small pieces were cut and placed in sterile Petri dishes. These pieces were then liberally inoculated with a bouillon culture of the plague bacillus and the dishes placed in the incubator. Another portion was placed directly in a tube of bouillon, and its growth proved that it was free from bacteria, save the hay bacillus and its spores. For several days small pieces were cut off from those contained in the dishes, and these were also planted into bouillon tubes. The length of life of the plague bacillus under these conditions and this microbial association is uncertain. For two or three days they were present in numbers; this number grew rapidly more limited, and by the twelfth day the plague bacilli were difficult of detection. Between this and the eighteenth day they disappeared completely, though the hay bacillus is still active and is growing in great abundance.

Subsequently a large assortment of Chinese food products was obtained, and with these experiments were made. The products in question consisted ot the legs of smoked and dried ducks; dried oysters; dried cuttlefish; dried ducks' gizzards; ducks' gizzards dried and then placed in oil; smoked and dried pork; ducks' eggs preserved in a mixture of mud and rice chaff. In this last the mixture had originally been wet, but had dried out until there only remained a mass of pulverulent earth and chaff surrounding the egg.

Portions from each of these specimens were thoroughly inoculated with a bouillon culture of the plague bacillus, and the dishes containing them were placed in the incubator at 37° C. for about twenty-eight hours. Small pieces were then cut off each and these pieces planted into bouillon tubes, which were incubated for twenty-four hours.

Of the seven specimens, three alone showed any growth, viz, the pork, the dried gizzard, and the cuttlefish. A specimen from the growth in each case was removed and stained with carbol-thionin solution (the stain by election for plague bacilli), and microscopic examination showed the following: On the pork the growth was the *B. subtilis* (hay bacillus) alone; on the dried gizzard, hay bacillus; on the dried cuttlefish, hay bacillus and an ordinary mold.

In view of these results, therefore, I would respectfully submit the opinion that it is exceedingly unlikely that the Chinese food products in question could convey the germ of plague even should they accidentally become contaminated with the same, and under the ordinary conditions of commercial intercourse I much question whether such contamination is likely to occur.

As these results may have a bearing on the quarantine restrictions at present in force against these food stuffs, they are submitted at once without waiting for further observations, which, however, will be carried on from time to time.

Respectfully,

H. D. Geddings,
Passed Assistant Surgeon, Marine-Hospital Service,
Acting Director of Laboratory.

The Surgeon-General Marine-Hospital Service.

Bubonic Plague at San Francisco, Cal.

To the date of the last annual report of the Service, November 1, 1900, there had been reported as having occurred in the city of San Francisco, Cal., since March 6, 1900, 18 cases of bubonic plague, all of which resulted in death. Two cases, deceased October 31 and November 1, respectively, were reported November 2, and therefore could not be included in the report for 1900. The last case enumerated in that report died October 14, 1900, since which date there have occurred the following:

Number.	Race.	Discovered.	Died.
19	Chinese		Oct. 31, 1900
20	do		Nov. 1, 1900
21	White		Nov. 3, 1900
22	Chinese		Dec. 7, 1900
23	do		Jan. 6, 1901
24	do		Jan. 15, 1901
25	White		Do.
26	Chinese		Feb. 5, 1901
27	do		Feb. 6, 1901
28	do		Feb. 7, 1901
29	do		Feb. 10, 1901
30	do		Feb. 11, 1901
31	do		Feb. 12, 1901
32	do		Feb. 24, 1901
33	do		Apr. 1, 1901
34	do		Apr. 4, 1901
35	do		July 6, 1901
36	Japanese		July 9, 1901
37	do		Do.
38	do	July 9, 1901	(a)
39	do		July 12, 1901
40	Chinese		Aug. 31, 1901
41	do	Sept. 11, 1901	(a)
42	do		Sept. 14, 1901
43	White	Sept. 16, 1901	(a)
44	do		Sept. 27, 1901
45	Chinese		Do.
46	do		Sept. 29, 1901
47	do		Oct. 10, 1901
48	do		Oct. 19, 1901
49	do	Oct. 22, 1901	(a)
50	do		Oct. 30, 1901

[a] Recovered.

It will be seen from the above that the total for the year ending October 31, 1901, was 32 cases and 28 deaths, 4 being whites, 4 Japanese, and the remaining 24 occurring in members of the Chinese race.

As stated in the last annual report, although but few cases were discovered during the summer and fall of 1900, the Service maintained, through its officers in San Francisco, a close watch upon the situation, Surgeon Kinyoun reporting, from time to time, the cases as they occurred and any facts in connection therewith which seemed pertinent.

OCTOBER, 1900.

In October, cases of plague still being reported, the Bureau desired to ascertain the exact status of affairs regarding precautionary measures taken by the local authorities, and the following letter and telegram were sent Surgeon Kinyoun:

[Letter.]

TREASURY DEPARTMENT,
OFFICE OF SURGEON-GENERAL M. H. S.,
Washington, October 20, 1900.

SIR: It is understood here from your telegrams that there was a case reported October 10, which has been verified by bacteriological examination, and that another case was reported October 15 in which all the symptoms point to plague.

You are requested to inform the Bureau what efforts are being made by the local board of health with regard to these isolated cases of plague which are being discovered; also, in your telegraphic reports, please state whether the cases are among Chinamen or not. It is presumed that the two cases referred to in this letter were among the Chinese. I have to request that you will verify this supposition.

Respectfully,

WALTER WYMAN,
Surgeon-General M. H. S.

SURG. J. J. KINYOUN,
San Francisco Quarantine, Angel Island, Cal.

[Telegram.]

WASHINGTON, *October 26, 1900.*

KINYOUN, *Angel Island, Cal.:*

Send telegraphic reply to letter of October 20, regarding precautions by either local or State board.

WYMAN.

[Telegram.]

ANGEL ISLAND, CAL., *October 27, 1900.*

Surgeon-General WYMAN, *Washington:*

Referring to your letter of 20th just received, 3 plague, fatal, all Chinese, occurring Chinese quarter on October 5, October 11, October 14. Separate foci except 1 case, October 11, from same premises case July 5. The local board of health not enforcing measures adequate to meet conditions. No hospital for plague, no place for detention suspects, no proper measures disinfection. Suspects quarantined in infected houses when they can be apprehended. The mayor not inclined to take any action until after November 6, because of attitude of local press. The local board of health keeping the State board informed. Nothing done by State board, save observation, as can not act unless the governor consents. The State board hold meeting after November 6. In meantime think the local board can meet situation.

KINYOUN.

San Francisco Quarantine Station,
Angel Island, Cal., October 29, 1900.

Sir: In reply to Bureau letter of the 20th instant and in confirmation of telegram sent on the 27th, I have the honor to state that during the month of October, 3 cases of plague have occurred in San Francisco among the Chinese. All cases terminated fatally. The first death occurred on October 5, at 720½ Dupont street. The case was a cigar maker who had been working just previous to his last illness in a cigar factory on Battery street. The history which was obtained from the acquaintances of the man was that he had been ill about four or five days before death. No clinical history of his illness could be obtained. The post-mortem examination was limited to the removal of the enlarged femoral glands, which, on examination, both microscopically and bacteriologically, showed the plague bacillus. The bacteriologist of the city board of health submitted some of the gland tissues to me for an examination. This was examined in the laboratory at this station, with the result of confirming the diagnosis.

The second death occurred on October 10 at 767 Clay street, in the same house whence a case of plague was removed to the city hospital, dying there on July 5. This man had been ill for a week or more, and was treated by a white physician. The death certificate gave the cause of death "typhoid pneumonia." Dr. Kellogg informs me that, on inspecting the body, a mass of enlarged femoral glands was seen, which, on removal, showed evidences of acute infection. Microscopical and bacteriological examination demonstrated the cause of death to be plague.

On October 14, at request of Dr. O'Brien, the health officer, I visited a case at 905 Clay street, which was reported to present certain suspicious symptoms. This case gave a history of being ill for three and one-half days. The attack commenced with a rigor, followed by fever, giddiness, nausea, and vomiting. He was seen on the evening of the 13th by a white physician, who stated that his temperature at the time of his visit was considerably over 38° C., pulse very rapid and weak. There was also nausea, vomiting, and slight diarrhea. On the following morning, the 14th, a considerable swelling of the glands in the femoral regions was observed. There was considerable elevation of temperature, and more prostration than existed the day previous. He then reported the matter to the health office as being probably a case a bubonic plague. The patient was seen about 5 o'clock on the same day by several physicians, viz, Drs. Bulkley and O'Brien, of the health board; Dr. Bunnell, police surgeon; Dr. Ryfkogel, bacteriologist to the State board of health; Dr. Lumsden, Dr. Pillsbury, and myself. The patient presented the appearance of one profoundly ill with an acute infectious disease. His temperature was 39.7° C., pulse 140, soft and compressible. There was considerable delirium. Physical examination revealed an enlarged spleen and a mass of enlarged glands in the left femoral region. There were also several reddish spots over the chest and abdomen, having all the appearances of subcutaneous hemorrhages. Cover slip preparations were made from the blood, and also of the fluid aspirated from the gland. Cultivations were also made from the gland and blood. Microscopic examination of the cover slips demonstrated the presence of numerous diplo-bacilli, which morphologically resembled those of bubonic plague. These bacilli took on a bipolar stain with thionine, and were easily decolorized by Gram's method. The cover slips made from the fluid removed from the gland contained countless numbers of these bacilli. In fact, it appeared more like that of a pure culture of plague than a specimen taken from the body. The case died at 11 o'clock that night, and on the following day Dr. Kellogg, the bacteriologist, made a post-mortem examination, removing the spleen and mass of enlarged glands. These tissues, on examination, gave the typical appearances of plague infection.

On the following day, the 16th, colonies had developed in the tubes inoculated from the blood and glands. These were examined and found to be those of bubonic plague. Animal inoculations made from these cultures were in every way confirmatory.

The State board of health have instructed their bacteriologist, Dr. Ryfkogel, to be present at all post-mortem examinations and make an independent investigation. All sanitary inspectors, which were for a time employed by the various members of the board of health, at the instance of the governor, have been discharged. Dr. Crowley, a member of the State board of health, stated to me on the 27th instant that the State board of health was of the opinion that for the time being the city board of health was able and ample to meet the requirements of the situation; that while there had been bacteriological evidence of the existence of bubonic plague, there were not sufficient clinical data to warrant any steps to be taken. * * *

In conclusion, I would state that it is my belief that the area of infection is gradually growing wider, so that now there are only 3 blocks of the Chinese quarter proper in which there has not occurred, since March last, a case of plague.

The conditions which will obtain in the next six months will be, in my opinion, conducive to a further outbreak. The Chinese population will, in a few weeks, be augmented by several thousand more than exists during the summer months. About 3,000 Chinese return every fall from the salmon canneries of Alaska. Then at the end of the fruit-picking season, which now is rapidly drawing to a close, large numbers of Chinese who are thus engaged seek a temporary home in San Francisco during the winter months. These people to all intents and purposes are contract laborers, and are of the lowest cooly class. They live under the worst hygienic conditions imaginable. It would, therefore, not surprise me to see a number of cases of plague occurring among this class of people. I will transmit, as soon as obtainable, a map showing the infected area, as well as the number of cases which have already occurred.

Respectfully

J. J. KINYOUN,
Surgeon, U. S. M. H. S.

The following letter to the governor of Texas illustrates the Bureau's view of the situation at this time:

TREASURY DEPARTMENT,
OFFICE OF SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington, October 27, 1900.

MY DEAR SIR: In accordance with the request made by you at your visit to the Bureau last Tuesday, with regard to the plague situation in San Francisco, I have to state that the situation, so far as our knowledge goes, is not acute. There were in all, 15 cases reported from March last until August, and the latest advices show that there have been 3 cases in October, namely, October 5, 11, and 14. The disease has certainly not manifested itself in the manner in which we feared when the first cases were discovered and they have all been among the Chinese. The experiences in Oporto and Glasgow, as well as Santos, indicate that the disease is more easily checked than yellow fever, and with measures which would be ordinarily not considered scientifically perfect, suppression has followed. The local board of health in San Francisco is keeping the State board informed and the latter is keeping the matter under observation, but I have no report to show any hospital established for plague cases or for the detention of suspects, though some quarantine measures are being carried on. In view of the small number of cases that have been reported I have not regarded the situation as critical, but it is a question whether it may not become so after the onset of the rainy season. The local sentiment has been so strong that I have reason to believe that less active measures are being taken by the local authorities than may be taken after election. With regard to commerce I believe that the exclusion of personal effects coming from Chinatown, and the surveillance of passengers also from Chinatown, with a view to determining and examining those who may give evidence of illness, would meet the present requirements.

Very truly, yours,

WALTER WYMAN,
Surgeon-General Marine-Hospital Service.

HON. JOSEPH D. SAYERS,
Governor, Austin, Tex.

NOVEMBER, 1900.

In November three cases were reported, as follows:

[Telegrams.]

ANGEL ISLAND, CAL., *November 2, 1900.*

Surgeon-General WYMAN, *Washington:*

Two Chinese found dead yesterday; plague, same family. Mother femoral bubo, child probably pneumonic. Typical organism found in both. House has bad sanitary history.

KINYOUN.

ANGEL ISLAND, CAL., *November 6, 1900.*

Surgeon-General WYMAN, *Washington:*

Another case plague reported by the local board of health, occurring November 4; a trained nurse dead, Pilgrim Hospital; had been nursing a supposed case of diphtheria, which terminated fatally October 29, on Pacific street. Clinical history and post mortem examination of nurse demonstrate undoubted plague. Animal inoculations made. Both cases white. Did not occur in Chinatown. No connection with other cases traced. Hospital authorities burned morgue to-day. Believe other cases occurring in San Francisco being reported under other name. Local board of health approached United States court yesterday; attitude now entirely changed; practically amounts to reversal of position assumed few months ago. Case of plague reported November 1; diagnosis confirmed by bacteriological examination in laboratory.

KINYOUN.

DECEMBER, 1900.

On December 1 the following telegram was sent Surgeon Kinyoun to obtain further information as to conditions prevailing:

[Telegram.]

WASHINGTON, *December 1, 1900.*

KINYOUN, *Angel Island, Cal.:*

Referring to your letter of October 29, press dispatches indicate that greater care is being exercised by the local board of health. Wire briefly measures being taken to prevent spread of contagion of plague, and follow with details in letter.

WYMAN.

To which Dr. Kinyoun replied by telegram of December 2 and letter of December 6, setting forth the situation in full, both of which follow:

[Telegram.]

ANGEL ISLAND, CAL., *December 2, 1900.*

Surgeon-General WYMAN, *Washington:*

Your telegram of 1st received. Press dispatches regarding greater care exercised by local board of health erroneous. Situation now practically the same as outlined in my letter of October 29. The health officer of San Francisco admits that so far the local board of health has made no progress dealing with plague among Chinese. Same conditions as April 28 last. The local board of health has no funds nor efficient force for carrying out sanitary measures. No inspection. No facilities for segregating contacts, although some talk providing such place if can be found in the infected area. The mayor approves. No adequate disinfecting force. Burning mortuary childrens' hospital done on request hospital authorities. Letter follows.

KINYOUN.

SAN FRANCISCO QUARANTINE STATION,
Angel Island, Cal., December 6, 1900.

SIR: I have the honor to confirm my telegram of the 2d instant regarding the plague situation in San Francisco.

In my letters of October 19 and 29 I referred to the peculiar conditions, largely political, which seemed to deter the health authorities from doing anything toward the eradication of plague infection in San Francisco, and further stated that I did not know what action would be taken after election. I have in the meantime kept in touch, so far as was possible, with the local board of health, and with the State board of health through one of its members, in order that I might be in a position to keep the Bureau informed as to what was transpiring here.

My recent inquiries and investigations regarding the plague situation fully confirm my suspicions, as stated in my telegram of November 6, that deaths of bubonic plague were being reported to the health offices under other diagnoses. In confirmation of the above statement, I beg to inclose for your information a transcript of the mortuary record, showing number of deaths which have occurred among the Chinese from June 30 last to December 1. It will be seen from this list that 160 deaths have occurred during this period: Two in June, 40 in July, 15 in August, 30 in September, 31 in October, 42 in November.

The majority of the deaths returned have been certified to by a Dr. F. P. Wilson. Dr. Wilson holds an appointment under the board of health as assistant city physcian, an office without salary. It is one of his duties to investigate and inquire into the cause of all deaths occurring among the Chinese who have not been attended during their last illness by a white physician, and to issue the necessary death certificate. The perquisite of his office is a fee of $3 for issuing each certificate. This is paid by the family or friends of the deceased or often by the Chinese undertaker. It is seldom, if ever, that Dr. Wilson is called to see a case during life, and the first intimation he has of a death occurring is when the undertaker notifies him to come and issue the certificate; whereupon he proceeds to make the necessary investigation.

The history of the case is gathered by what can be obtained from the family and friends and undertaker, and further by an inspection of the body. It is seldom indeed that a straightforward history can be obtained concerning the last illness of the decedent. The family and friends will usually tell all sorts of impossible stories, and with evident intent to deceive. Frequently, however, no history can be obtained, and the diagnosis and cause of death must be made by simply inspecting the body. I have witnessed the efforts to obtain histories concerning some of these cases, and can personally attest to the great difficulties which are encountered. It is next to impossible, in my opinion, to form anything like a correct diagnosis as to the cause of death. It is a matter largely of guesswork.

The position occupied by Dr. Wilson is, in fact, an adjunct to the coroner's office, and when viewed in this light it appears to me that the laws governing coroners' cases are not observed.

As the diagnoses of the majority of cases occurring among the Chinese are made up upon the evidence furnished by the relatives and friends, and not by what is revealed by post-mortem examinations, it will only emphasize the correctness of the conclusion which I propose to draw a little farther on. A post-mortem examination is a rarity, only made when there is a strong suspicion that the case is one of bubonic plague.

By referring again to the inclosed list of deaths particular attention is invited to the causes of death. It will be seen that there have occurred 28 cases of interstitial nephritis, acute and chronic; 2 cases of parehchymatous nephritis, 6 of endocarditis, 2 of cerebral apoplexy, 4 of lobar pneumonia, 1 of acute peritonitis, 9 of bubonic plague. Particular attention is called to the cases of interstitial nephritis and endocarditis. Twelve cases of interstitial nephritis and six cases of endocarditis have occurred during the month of November. The diagnoses in all these cases have been made post-mortem, and not on autopsy findings. While I do not wish to unduly criticise a diagnosis made under these circumstances, it seems to me that it is next to impossible to arrive at the exact cause of death by such an examination as is now conducted.

In the matter of cases of plague occurring at 802 Dupont street on November 1 and 2 last, I happened to be present at the partial post-mortem examination conducted by Drs. Kellogg and Wilson. While there Dr. Wilson mentioned to me that only a few weeks before he had taken a body out of this same apartment wherein the cases of plague occurred which, from the history he obtained at that time, he thought had died from lobar pneumonia. In looking over the records I find that on September 10 a Chinese school-teacher died in these premises, the cause of death being certified to by Dr. Wilson as lobar pneumonia. On October 25 another death occurred in this same house, of a Chinese woman aged 23 years, from interstitial nephritis, which was also certified to by Dr. Wilson. Following these two cases were those of bubonic plague, occurring November 1. Dr. Wilson admitted to me that the case of the Chinaman who died of supposed lobar pneumonia on September 10 was in all probability one of bubonic plague, but that he did not think of such a possibility at the time he made his investigation. In all probability all these cases were bubonic plague. The same supposition applies to many other cases occurring during this period, and particularly to those of November, wherein the number of cases of interstitial nephritis and endocarditis are unusually large, and are out of proportion to the deaths from other causes.

A few days ago I transmitted to the Bureau a map on which is shown the location of the cases of plague which have occurred in San Francisco since March 6 last. (See map which accompanies report of plague commission, hereinafter published.) It will be observed that the cases occurring have been, save in two instances, independent one from another. The first instance that we note is a secondary case occurring at 767 Clay street, and another at 802 Dupont street. These furnish instances where secondary cases were contracted from what appears to be an infection of the premises. All others are independent and no connection so far can be traced between any of them.

There is an intermediary which has not as yet been mentioned heretofore, which must not be disregarded—that is, the recovered cases. All cases of plague which have been discovered up to date have been fatal. No mild cases have been discovered. It would be most unusual to suppose that the number of cases reported by the health office are all that have occurred in San Francisco, because no epidemic of plague so far has been attended with a mortality of 100 per cent. We do know that there have been a number of cases of plague which have been returned to the health office as other diseases. If fatal cases of plague have been returned the health office as typhoid fever, phlegmonous erysipelas, typhoid pneumonia, and diphtheria, it is only fair to assume that mild cases presenting a mild type of the above-mentioned diseases would be returned to the health office under these names and be treated as such.

I am inclined to believe that the mild cases of plague have not been recognized as plague, but have been treated as other diseases by the practitioner, and with no intent to mislead or deceive. These recovered cases, of which there must be a few, are no doubt one of the media through which the infection is disseminated and kept alive. We must not be unmindful of the infected premises—the pawn shop, the opium den, the gambling resort, and vermin as other agencies for spreading disease. Looking over all the histories of the cases, the behavior of the disease seems to point to central foci of infection; in all probability the gambling dens or similar resorts, of which, or where, no white man knows, nor perhaps will ever know.

The mortuary records as now sent to the health office do not show a very great increase in the number of deaths over the same period last year. Notwithstanding this fact it is believed by many physicians, including those of the members of the board of health, that the number of deaths returned were not all the deaths which occurred in the Chinese quarter. The situation regarding this particular phase is aptly summed up in a paragraph occurring in the British Medical Journal of October 27, 1900, page 1253, which says:

"There can be no doubt that Chinatown, San Francisco, has been infected since the early part of this year at least, although the number of cases known to have occurred is small. *The Chinese community in San Francisco is large and seems to form a kind of imperium in imperio, if Mr. Bryan will excuse the expression. How many Chinamen have died of plague, how many corpses of such persons are now waiting shipment to China for burial, no white man knows, or ever will know.*"

There is a feature of the Chinese life which no doubt tends to prevent the infection from spreading more rapidly than it does, and that is the way in which the individual Chinaman lives. Every Chinaman, if he can afford it, rents a small room or closet large enough to contain him and his few belongings. Usually the room is no more than 4 feet wide by 6 feet long by 6 feet high. Here he sleeps and ofttimes becomes sick. The Chinese landlord, such as exist here, rents a building, divides it up into small rooms, which he rents to the Chinamen for no small sum. A room, say 16 feet square, will often contain as many as twenty of these apartments. This system I believe has been in itself a safeguard against the rapid dissemination of plague, because if a case occur in one of these apartments it is in a measure shut off for the time being from the rest of the occupants, and the exposure to infection under these circumstances is far less than if all the persons occupying these quarters were huddled together in one room.

Another feature in preventing the spread of disease is the Chinese fatalism or fear. When a Chinaman is quite sick, acquaintances who appear at first solicitous about his welfare become fewer and their visits less frequent. Should the inmates of the house suspect that the person is ill with what they term "black fever," there is a general exodus, no one standing on the order of his going. In conversation with several Chinese I am told that this is the mode of procedure in China where the disease is endemic. Their actions are not to be construed altogether as a fear of the quarantine restrictions of the board of health. This exodus has occurred from a number of houses where the disease was suspected, and long before the board of health was apprised of the nature of the illness. When the health officers came to investigate the cause of death the inmates had decamped bag and baggage, nothing remaining but the corpse and the Chinese undertaker.

The sanitary condition of Chinatown is no better than it usually is at this time of the year. The streets and alleys contain their accustomed amount of filth and refuse. The rains and fogs have added not a little to the mud and slush which now fills the interstices of the miserably paved streets. The sewers are practically in the same condition as last year. The same system of intercommunication exists between them and the houses, and they are doubtless used as subways from one house to another. Cellar dwellers still inhabit their caverns, and, so far as anyone knows, they are burrowing, excavating, and maintaining their usual subterranean communication, rendering it not only easy to pass and repass from one portion of a block to another, but forming at the same time an easier way for rats to gain access to the houses than if they were compelled to burrow. The obstacles which were in the way of dealing with the plague last spring have in my opinion in no wise diminished; in fact I think I am warranted in saying that they have increased. The various injunctions which have been entertained by both State and Federal courts, the contempt proceedings against the quarantine officer of last June, the aid and abetting of a certain clique of lawyers, the political capital which could be made out of the situation, have all conspired to convince the Chinese Six Companies that the Chinaman is in no wise to be considered obliged to observe or comply with the health laws of the city, State, or United States. The attitude assumed by this powerful corporation forms a good excuse for the individual Chinaman, the Tong and Highbinder Societies, to follow suit and set at naught and defiance any or all the laws, rules, and regulations which are considered necessary for the sanitary protection of the citizens of this State and country.

On November 24 I saw Health Officer Dr. O'Brien, and the whole subject of the plague situation in the Chinese quarter was discussed. During this interview he admitted to me that so far the health department had been absolutely powerless to enforce the sanitary regulations in Chinatown or make any progress toward eradicating the infection of plague from this quarter. The continued opposition of the Chinese as a body toward all white interference had rendered their best-laid plans nugatory. At present they were practically in the same position as last spring, and were in the dark as to what was going on in this quarter. From all I can gather it appears that Dr. O'Brien's statement fully covers the ground and aptly describes the situation.

The Federal court has seen fit, since the cases of plague occurred in October, to make some modification of its sweeping orders, which prevented anyone from doing anything in Chinatown. The health authorities are now allowed to remove those suspected of being exposed to plague to a place of observation in Chinatown—even allowed to exercise force to keep these persons under observation for a reasonable time. This is considered a great concession when one recalls what has transpired during the last seven months. I am told that Mayor Phelan has been approached in regard to the situation, and he has agreed to see what can be done toward furnishing the necessary means to equip a place for segregating suspects, if one can be found. The health office, through its chief sanitary inspector, Dr. Chalmers, has attempted to gain possession of a place in Chinatown which is admirably adapted for a place of detention, but has been prevented by threats of legal process to prevent its use for this purpose. So far no place has been provided.

The board of health has no funds available for carrying out anything else than the ordinary routine work of its department. The board of supervisors appropriated the sum of $7,500 early last spring for the purpose of controlling epidemics, but since then no funds have been available for the board of health for this purpose. Matters are going along in the usual way, with no effort being taken to enforce measures considered necessary anywhere else to stamp out plague.

In my letters of October 19 and 29 I made the statement that the board of health had not taken any steps toward enforcing a proper disinfection of premises wherein cases of plague occurred, there being no system nor adequate force for this purpose. There is no systematic inspection made of the Chinese quarter or districts adjacent thereto. As previously stated, the only information which the health authorities have of a case of plague occurring is that a dead Chinaman is to be found at such and such a place; whereupon an investigation is made.

Physicians practicing in Chinatown are, so I have been informed, instructed to report all cases presenting suspicious symptoms to the health office. This is not done save in a few instances—one of the physicians has reported a case of plague. The majority of the white physicians practicing among the Chinese have not impressed me favorably. Many of them are nothing more nor less than vampires, who engage in the work simply for the living that is in it, and will do anything to curry favor with their patients, who most naturally are opposed to the health authorities. The board of health does not expect the Chinese physicians to pay any attention to its requests or mandates. In fact, it is very difficult to ascertain who the Chinese physician was in attendance on a case during its last illness.

In Bureau telegram of the 1st instant I fail to understand one portion, which refers to the approval of measures.[a] If it is meant measures which I would approve for the eradication of plague in San Francisco, they would be on the following order:

First, that an inspecting corps of a few good medical men be appointed for duty in the infected district. That it would be the duty of these inspectors to investigate all cases of illness that they could find out, or are brought to their attention. If, on investigation, these present suspicious symptoms, immediate steps be taken to apprehend so far as possible all those who have been in direct contact with the case. During this time to institute measures for an accurate diagnosis, and if found to be plague, those in direct contact be removed to a place of detention and there kept under observation for a sufficient length of time to insure their freedom from infection. To offer as a protection the Haffkine prophylactic to those who might become exposed to the plague, and the Yersin serum to those actually exposed. The sick to be removed to a place where they can be properly and humanely treated, to be preferably a place within the Chinese quarter. A disinfecting corps which has been properly trained in the performance of its duties, and under the supervision of a competent medical man, to assume immediate charge of the infected premises and disinfect it in accordance with the accepted rules for such disinfection. This would appear all that is necessary for the control of plague in a civilized community, and has proven highly successful in the cities of Glasgow and Sydney, but whether this would be sufficient to compass the question of plague among the Chinese living here under the conditions they do, is more than problematical. I am almost at the point sometimes of stating that plague will exist in Chinatown, San Francisco, until the district now occupied by the Chinese has been depopulated and destroyed. I believe that if the drastic measures which followed the course of plague in Honolulu had not occurred plague would have been among the Chinese there to-day. The fortunate circumstances which led to the destruction were well-timed, and were consummated so quickly that it was done before anyone could interfere. Whether the citizens of this city, as well as of the State, can be brought to a realization of the gravity of the situation, and be compelled to do something and eradicate this pest hole from San Francisco before it menaces still further the whole country, is a debatable question. Probably no steps of a drastic nature, far-reaching in their consequences, or perfect in result, will be taken until a sufficient number of cases have occurred to cause consternation. When this occurs—and it may be soon—perhaps San Francisco will be awakened from her dream, rid herself of the curse, and make the Chinaman set his house in order, keep it clean, or go.

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[a] Telegram read: "Wire briefly" measures, etc. Evidently mistake in transmission, etc.

As previously referred to, there are many here who hold, in common with a certain person (previously alluded to), that it is not necessary to advertise the presence of plague in San Francisco until it is "time to run," meaning thereby, when a sufficient number of cases have occurred to cause an epidemic of large proportions. The attitude assumed by the press and mercantile bodies and the politicians invites a condition where "running" may soon be the order of the day.

While the Bureau is publishing the facts regarding the plague in San Francisco the collector of customs, so I am informed, is still issuing clean bills of health to vessels departing from San Francisco. While I do not wish to criticise the collector's action in what he considers duty regarding vessels departing from this port for foreign countries, I do not believe that the ports of the Pacific coast and those of Honolulu and Manila are being in any way protected by such a procedure. We now require all vessels arriving from Manila, where plague prevails, to conform strictly with the regulations before they are admitted to enter any port of the United States. Each bill of health is signed by the quarantine officer at Manila, stating the number of cases of infectious disease occurring in that place for the two weeks just preceding its departure. The same is expected of vessels arriving from the Hawaiian Islands and Alaska, should any infectious disease occur within these countries. In common justice to these ports, they should be put in possession of facts and accorded the same treatment as we demand. If all passengers and cargoes arriving from the Orient and the Philippine Islands were destined to remain in San Francisco it might not be necessary under the circumstances to exact of vessels a strict conformity to the regulations, but allow them to be entered, providing no case of actual sickness was found on arrival. This method of procedure would not cause a very great additional danger to the city over that which now exists.

While these restrictions on commerce are enforced on vessels, no precaution has been taken so far by the local board of health or by the State board to protect the outlying districts or surrounding States from the possibility of plague infection. It appears that the "commercial interests" of San Francisco are more dear to the inhabitants than the preservation of human life. Frequent and frantic appeals have been made by the local press to the merchants and business men to take some action to prevent a possible quarantine, but not a word of criticism about what is taking place here from day to day. No sentiment has been expressed against a possible danger arising to the people, to their wives and children. These people seem to be perfectly indifferent whether or not bubonic plague exists in San Francisco, so long as they can sell their products and make large percentages on their investments.

We have noted the attitude of the "commercial interests" in Southern States where yellow fever has appeared, but never has it approached anything like what is to be found here. It would be difficult to say what will be necessary to awaken these people to their responsibility as citizens of the United States.

* * * * * * *

As to the probable cost of eradicating plague from San Francisco, it would, in my opinion, be not less than has been required for Glasgow and Sydney. As I stated in one of my dispatches of May last, this is one of the most stupendous problems that the people of San Francisco have ever attempted to solve. The reports that $5,000,000 have been expended in Glasgow and $2,500,000 in Sydney may be exaggerations, but I am certain that before San Francisco rids herself of the plague infection she will be called upon to spend more than $7,500, which is the amount so far appropriated for the suppression of bubonic plague.

Respectfully,

J. J. KINYOUN,
Surgeon, Marine-Hospital Service.

DECEMBER 7.

P. S.—I have just received information from the health office that a case of suspicious illness has been reported by a Dr. Hodgehead, which he thinks requires investigation. Dr. Kellogg, bacteriologist of the city board of health, informs me that he has just returned from seeing a sick Chinese at 844 Washington street, which presented the clinical evidences of plague. A few drops of serum were obtained from the enlarged mass of glands in the femoral region, which on examination revealed the typical organism of bubonic plague. The case died on the morning of December 7, and in the evening I was present at the autopsy. The post-mortem examination revealed the typical evidences of plague. Microscopic examination of specimens made from the spleen, the enlarged gland, and the heart's blood demonstrated the bacillus of plague. No history can be obtained concerning the case other than Dr. Hodgehead (who may be recalled as being one of the inspectors for the State board of health, and also for the Chinese Six Companies) reported to the health office, i. e., that he had just seen a case of suspicious illness which he thought required investigation. The case was first seen by him on December 5. There is a rumor that the man had been ill for six days, but it is not confirmed. I have made the usual cultivations and animal inoculations. I will report further on the case within a day or two.

Respectfully

J. J. KINYOUN,
Surgeon, Marine-Hospital Service.

One case of plague occurred in December, and it was reported as follows:

[Telegrams.]

ANGEL ISLAND, CAL., *December 8, 1900.*

Surgeon-General WYMAN, *Washington:*

Another case suspected plague reported to the health officer December 6, died December 7. Post-mortem examination shows large femoral bubo and enlarged spleen, both containing typical organism. Case occurred on Washington street. No history obtained. Animal inoculations made.

KINYOUN.

ANGEL ISLAND, CAL., *December 13, 1900.*

Surgeon-General WYMAN, *Washington:*

Case plague dead December 7; diagnosis confirmed by bacteriological examination.

KINYOUN.

DETAIL OF SURG. J. H. WHITE.

In view of the facts contained in the foregoing correspondence, and because of a controversy with regard to certain food products from China which had been held up by the United States quarantine officer at San Francisco, the Pacific coast stations having also been some time without inspection, it was deemed advisable that the officer in charge of the Bureau division of domestic quarantine, Surg. J. H. White, who has direct supervision under the Surgeon-General of these matters, should make a general tour of inspection on the Pacific coast. (For correspondence, etc., with regard to the food products above mentioned, see headline "Quarantine decisions regarding certain Chinese food products," page 487.)

On December 26, therefore, the following letter was addressed to Surgeon White, detailing him for this duty:

TREASURY DEPARTMENT,
OFFICE OF SURGEON-GENERAL M. H. S.,
Washington, December 26, 1900.

SIR: You are hereby directed to proceed to the Pacific coast to make formal inspection of each of the United States quarantine stations located thereon, and also to inspect the U. S. marine hospital at San Francisco. Your itinerary on the coast must be determined by yourself, though it is deemed advisable by the Bureau that you should proceed first to San Francisco. While in that city you will examine into any matters relating to the Marine-Hospital Service which may require your attention, and particularly that part of the Service work which comes under your own division of domestic quarantine in the Bureau. You will look into the matter of food products, which, as you are aware, have engaged the attention of the Bureau for some time, and make such recommendations as may seem to you necessary regarding the quarantine regulations affecting their importation.

You will keep the Bureau thoroughly informed as to your movements, so that telegraphic instructions may be sent you at any time, and will return to the Bureau by way of New Orleans, where you will also inspect the marine hospital and confer with Passed Assistant Surgeon Wertenbaker relative to the results of his investigation into yellow fever during this fall and winter.

As these duties will require considerable time, you will perform them in a manner as expeditious as may be consistent with completeness and return to the Bureau as soon as practicable.

Respectfully,

WALTER WYMAN,
Surgeon-General Marine Hospital Service.

Surg. J. H. WHITE,
Marine-Hospital Service, Washington, D. C.

JANUARY, 1901.

On January 1 Surgeon White telegraphed his arrival, and the following correspondence ensued:

[Telegrams.]

SAN FRANCISCO, CAL., *January 1, 1901.*

Surgeon-General WYMAN, *Washington:*

Arrived. Will report further after getting to work.

WHITE.

SAN FRANCISCO, CAL., *January 8, 1901.*

Surgeon-General WYMAN, *Washington:*

Met chamber commerce to-day. Their charge same as sent Secretary, but not proven, except some indelicacy in *Coptic* examination, and I learn passengers themselves chose publicity of smoker to save time. Other charges, exclusive of some delays to mails, are unavoidable under regulations. Am trying to impress this and obtain harmony. They charge also false statements existence plague. I was present one plague January 7th; positive. Kerr is acting, I think, on his own initiative, and governed by regulations. Think representatives of Six Companies, commercial interests of San Francisco, steamship companies, and press are all in unison; perhaps friendly to Service, but inimical to Joseph J. Kinyoun, but doubt even former. Chinese animal and vegetable food products dangerous. Letter to-morrow. Shall I wait mandamus hearing January 14?

WHITE.

WASHINGTON, *January 9, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Regarding plague in San Francisco you might say situation not acute. Experiences Oporto, Santos, and Glasgow, and climatic conditions in San Francisco make it more a matter of future menace, as instanced in British Journal, December 1, page 1614. Present in Calcutta two years before acknowledged. Therefore, more to prevent future catastrophe than from present alarm, measures should be taken as necessity arises. Nor need they be in such manner as to excite alarm, but should include inspection, isolation and disinfection, just as in smallpox. Assured of this, publication would be unnecessary. Use this as your judgment dictates.

WYMAN.

SAN FRANCISCO QUARANTINE STATION,
Angel Island, Cal., January 9, 1901.

SIR:

* * * * * * *

(NOTE.—The starred portions of this letter refer to the controversy over Chinese food products, etc.)

* * * * * * *

I went with Dr. Kinyoun, Dr. Ryfkogel, bacteriologist of the State board of health, Dr. Kellogg, bacteriologist of the city board of health, and Dr. Chalmers, chief sanitary inspector, into the basement of 720 Jackson street at 10 o'clock on the morning of the 8th, and there saw the body of the Chinaman, a specimen from which had been examined on the night previous and found to contain plague bacilli, and I desire to add my testimony, for whatever it may be worth, to that of the others, in stating that it is my honest opinion that this man died of true bubonic plague. As a matter of common sense, it may be stated that the man either died of syphilitic inguinal bubo, chancroidal bubo, or bubonic plague, and I take it that no enlightened physician will claim that syphilis destroys life with a septic bubo, or that a chancroidal bubo exists without a chancroid, and therefore I am, on clinical data alone, absolutely forced to the conclusion that this man died of bubonic plague. I make this statement because various innuendoes have been put forth to the effect that possibly these corpses were inoculated with bacilli which have been found in the spleen, in the buboes, in the blood and in the various glands. For this reason I have called attention to the clinical side of the matter only, but I have also seen under the microscope the bacilli in this particular case, as well as in some of the others. I have carefully read the clinical histories in all these cases. I have met and conversed with Drs. Ryfkogel and Kellogg, and I am satisfied of their integrity and reliability. The corpse of this Chinaman rested on a board, one end of which was resting on a trestle and the other on a box of chow intended for the consumption of the Chinese people. Piled up behind the man were dozens of other boxes and bales of chow.

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Respectfully,

J. H. WHITE,
Surgeon, Marine-Hospital Service.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

[Telegrams.]

ANGEL ISLAND, CAL., *January 10, 1901.*

Surgeon-General WYMAN, *Washington:*

The governor of California desires plenary power for State board of health and new State quarantine officer for San Francisco personally controlled. Wrote you yesterday. See clippings, charges by implication plague inoculation. J. H. White thinks testimony of highest bacteriologist in America needed when J. J. Kinyoun will have diagnosis confirmed by bacteriological examination. Governor will not try to discover the truth if he can escape doing so.

WHITE.

ANGEL ISLAND, CAL., *January 10, 1901.*

Surgeon-General WYMAN, *Washington:*

By reason of infamous statements and libelous charges made by governor of California in message, I most respectfully request publication in full my letter of December 6. Every statement made therein true and fully justified. Governor has by implication charged me being accessory to inoculating dead bodies with imported plague germs in order to foist upon community plague scare. This reflects on Service as well as myself. Great stress now being laid press dispatch from Washington stating that Surgeon-General has no longer any confidence in reports sent by me regarding plague here, as no further mention is made in Public Health Reports, I being disgraced and discredited. Situation demands action be taken by you or allow me to defend myself. Rumors of Congressional investigation, which I hope are true.

KINYOUN.

WASHINGTON, *January 11, 1901.*

KINYOUN, *Angel Island, Cal.:*

Absolutely no truth in press reports concerning myself and your reports. See Public Health Reports, January 4. In accordance with semiannual custom, lists contagious diseases reduced and started anew and plague reports left out without any special instructions, but fact of omission probably taken as ground for dispatch. Have heard nothing here of Congressional investigation. Believe any such action would be to our advantage. Will wire again regarding your letter of December 6, after rereading.

WYMAN.

WASHINGTON, *January 11, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Telegrams received and appreciated. Believe situation no worse by recent events. I will wire again, but in meantime urge self-restraint upon Kinyoun under trying circumstances.

WYMAN.

SAN FRANCISCO, CAL., *January 12, 1901.*

Surgeon-General WYMAN, *Washington:*

Saw the president Southern Pacific; is friendly, and thinks press statement queer. Diagnosis is real point at issue, and I renew recommendation for commission preferably sent by the President to satisfy governor. Kinyoun exercises more self-restraint than I thought possible and much gratified by the Surgeon-General's wires yesterday. I think of trying a conference of the mayor, State board health, local board health, commercial interests of San Francisco, and the steamship companies. Don't know if possible, and want your opinion.

WHITE.

WASHINGTON, *January 13, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Regarding matter mentioned in your telegram January 12, the Assistant Secretary of the Treasury and myself will endeavor to arrange with Welch, Novy, and Barker, provided you can arrange, or think you can, with mayor, the local board of health, or other necessary authority, to examine plague persons. Think we had better not call in the President. Do not commit yourself until hearing further from me, but wire opinion. Referring now to your other suggestion, whether you shall have a consultation, believe you had better wait unless suggested by them.

WYMAN.

SAN FRANCISCO, CAL., *January 14, 1901.*

Surgeon-General WYMAN, *Washington:*

Your telegram of 13 received. Satisfied can arrange with the mayor and the local board of health for examination of plague cases. Shall I see them, or await orders? I suggested initiative by the President for effect upon the governor. You, of course, can best judge. Mandamus deferred by Judge Morrow to January 21. Judge Morrow former partner collector of customs. Apparently friendly. Kinyoun is ill, but not seriously, with appendicitis.

WHITE.

SAN FRANCISCO, CAL., *January 15, 1901.*

Surgeon-General WYMAN, *Washington:*

Referring to your telegram of 13, suggest Flexner and Barker having clinical knowledge plague. Findings not subject to carping. Write to-day fully. Request authority to proceed to Port Townsend, Seattle, Tacoma, Astoria, for the purpose of completing northern inspection, and return so as to be here, if possible, on time for matters named above. Norton, representing the State quarantine officer of Texas, informs me that there has been a death from pneumonia, two days' duration, at Bakersfield, Cal. There is one case plague reported at San Francisco, January 15. Kinyoun is still ill.

WHITE.

WASHINGTON, *January 18, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Flexner and Barker have accepted; Novy possibly. Will have them consult you on arrival, and it is understood that thermostats, culture media, etc., can be obtained there.

WYMAN.

SAN FRANCISCO, CAL., *January 18, 1901.*

Surgeon-General WYMAN, *Washington:*

Your telegram of January 18 received. Excellent thermostat and media at San Francisco Quarantine and San Francisco. Regarding matter mentioned by me regarding Bakersfield, bacteriologist of the State health authorities says specimen is very suspicious, smear affirmative. Thirty-seven fatal pneumonia reported there since January 10. Confidential until confirmation.

WHITE.

ANGEL ISLAND, CAL.,
January 18, 1901.

Surgeon-General WYMAN, *Washington:*

Case of plague reported January 6 confirmed by bacteriological examination. Also case reported occurring, Clay street, January 10. Another case (white) found dead, city hospital, January 16. Tissues submitted by the local board of health show typical organism. No history obtainable last cases; no connection between them. Rumors reported to J. H. White concerning Bakersfield confirmed by telephone received from the health officer January 18, stating a large number of cases of pneumonia have occurred among whites last two weeks, majority fatal. Member of the State board received specimens from Bakersfield which he submitted to bacteriologist of the State board for examination. Member says situation serious, but noncommittal about bacteriologist. The State board enjoined not to give out results of examination, but informs (absolutely confidential) that organism in spleen tissue gravely suspicious of plague. Believe Service should know facts. I am decidedly better; now out of danger; recovering rapidly.

KINYOUN

WASHINGTON, *January 19, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Regarding Bakersfield, though a matter of great importance, advise you to recall cases at Butte.

WYMAN.

Explanatory of the reference to Butte in the last telegram, it should be stated that during the year an epidemic of suspiciously virulent pneumonia occurred at Butte, Mont., so severe in type as to give rise to apprehension regarding the possibility of its being plague in pneumonic form, but upon investigation it proved to be epidemic pneumonia.

COMMISSION OF EXPERT DIAGNOSTICIANS APPOINTED.

As indicated in several of the foregoing telegrams to and from Surgeon White, it now seemed evident that, to a large extent, the success or failure of measures for the eradication of plague infection in San Francisco hinged upon the general acceptance of the correctness of the diagnosis. The local press and many of those high in authority, both sanitary and political, had been for some time strenuously denying the existence of plague in San Francisco, and although the Bureau and the Treasury Department both felt the most implicit confidence in the diagnosis, as already announced by officers of the Service and local bacteriologists, it was thought to be for the best interests of all to have a decision rendered on this point by men not in any way connected with Government service and who had had no previous connection with the situation in San Francisco, at the same time holding such high place as experts in plague matters as to render their diagnosis a conclusive proof of the existence or nonexistence of the disease. Accordingly, such action was taken, and a commission of experts, consisting of Prof. Simon Flexner, of the University of Pennsylvania; Prof. F. G. Novy, of the University of Michigan, and Prof. L. F. Barker, of the University of Chicago, was appointed on January 19 and at once proceeded to San Francisco. These gentlemen fulfilled all the requirements of strict neutrality, thorough experience with plague, clinically and bacteriologically, in different parts of the world, and were of such high standing as experts in this line of work as to make their joint opinion in the matter authoritative. The full report of this commission will appear later on. Below will be found the letter of appointment, signed by the secretary, followed by the letter of instructions, signed by the Surgeon-General:

[Letter of appointment.]

TREASURY DEPARTMENT, *Washington, January 19, 1901.*

GENTLEMEN: You are hereby appointed official commissioners from this Department for the purpose of ascertaining the existence or nonexistence of bubonic plague in the city of San Francisco, Cal., under such instructions as shall be furnished you by the Surgeon-General of the United States Marine-Hospital Service.

Respectfully,

L. J. GAGE, *Secretary.*

Prof. SIMON FLEXNER,
University of Pennsylvania.

Prof. F. G. NOVY,
University of Michigan.

Prof. L. F. BARKER,
University of Chicago.

[Letter of instructions.]

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL,
MARINE-HOSPITAL SERVICE,
Washington, January 23, 1901.

SIR: I inclose herewith a letter signed by the honorable the Secretary of the Treasury, appointing a special commission of the Treasury Department for the purpose of ascertaining the existence or nonexistence of bubonic plague in San Francisco or other ports or places in the State of Calfornia, under such instructions as shall be furnished by the Surgeon-General of the United States Marine-Hospital Service.

The commission is composed as follows: Prof. Simon Flexner, University of Pennsylvania, chairman; Prof. F. G. Novy, University of Michigan; Prof. L. F. Barker, University of Chicago, recorder.

A copy of the Secretary's letter has been furnished to the other members of the commission.

In accordance with the letter of the honorable the Secretary of the Treasury, you are directed to proceed, at the earliest practicable date, to San Francisco, where the commission will hold its first meeting at the Occidental Hotel.

You are informed that the bubonic plague has been reported to exist in San Francisco, and its existence has also been strenuously denied, and you are directed to place yourself in communication with the proper local authorities, with a view to obtaining facilities for the examination of cases, either deceased or living, suspected of being infected with this disease. You are further informed that it is the desire of this Bureau that your investigations should be entirely unprejudiced and independent. It is left for the commission to determine a proper location for pursuing its investigations, and it will meet with the approval of the Bureau if accommodations can be obtained at one of the laboratories connected with one of the institutions of learning in San Francisco.

At such time as shall seem appropriate the commission will call and pay their respects to the governor of the State and to the mayor of San Francisco.

A full report of your procedures and of your findings will be prepared by the recorder, signed by all the members of the commission, and the same transmitted to the Bureau immediately upon reaching a conclusion. The chairman of the commission, when a conclusion has been reached, will telegraph the same briefly to the Bureau, and your findings will not be otherwise given out until authorized by the Bureau. To this end you will await final orders from the Bureau before departure from San Francisco.

Vouchers are inclosed herewith upon which your accounts should be rendered for the expenditures incurred under the terms of the letter of the Secretary of January 19. If other expenditures become necessary, there are two courses to be pursued.

First. The small expenditures are to be paid by yourself, an accurate account of which should be kept, and a bill rendered by yourself for same. Receipts should be taken in all cases where possible and attached to the bill as subvouchers.

Second. Expenditures or expenses involving larger amounts. Should these become necessary you are requested to telegraph the Bureau, stating the approximate amounts and the purposes for which the expenditures are necessary, and receiving instructions from the Bureau relative thereto.

All expenditures other than those covered by the letter of the Secretary of January 19 shall be incurred only by the chairman of the commission.

You are requested, at least two or three times a week, to make a brief written report of the status of your investigations, not necessarily technical, in order that the Bureau may be informed as to the progress of the work of the commission.

Respectfully,

WALTER WYMAN,
Surgeon-General Marine-Hospital Service.

Prof. SIMON FLEXNER,
University of Pennsylvania, Philadelphia, Pa.

[Telegrams.]

WASHINGTON, *January 23, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Representative Chicago left last night, other two to leave Chicago to-morrow night. Instructions mailed them San Francisco at Occidental Hotel. Regarding notification to the governor arrangements have been made with California Senator to telegraph to the governor day commission arrives.

WYMAN.

WASHINGTON, *January 23, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Telegram received from Kinyoun, requesting authority to purchase generator, implies commission may work at San Francisco quarantine. Inform Kinyoun commission's instructions contemplate independence of Marine-Hospital Service and they have intimated California University as working ground. Aid them all you can, but not officially connected. If it is impossible to obtain working ground San Francisco, wire Bureau matter for consideration, with recommendations.

WYMAN.

SAN FRANCISCO, *January 23, 1901.*

Surgeon-General WYMAN, *Washington:*

Both your telegrams of the 23d received and understood. Was cordially received by the governor to-day. The governor will endeavor to arrange with the President, the Secretary of the Treasury, and the Surgeon-General of the Marine-Hospital Service for the Marine-Hospital Service to take charge of the work at San Francisco and straighten things out. To this end the governor to go to Washington, D. C., about March 15, I think.

WHITE.

WASHINGTON, *January 25, 1901.*

Prof. L. F. BARKER, *San Francisco, Cal.:*

Written instructions were mailed January 23. Summarized as follows: Yourself recorder of commission for ascertaining existence or nonexistence of said disease in San Francisco or other ports of California first meeting to be held on arrival at Occidental Hotel of others who left Chicago Thursday night. Investigations to be unprejudiced and independent. Location for pursuing same left to commission, preferably at some institution of learning. Commission to pay respects at suitable time to governor. Conclusions to be wired Bureau and strictly confidential until return message. Commission to await further orders before return. Give as little publicity as possible to operations and avoid expressions which might create alarm. Avoid expressing opinions. Operations should be under such precautions as to avoid criticism, Show this to other members on arrival.

WYMAN.

WASHINGTON, *January 25, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Barker should arrive to-night. See telegram to him.

WYMAN.

On this date the governor was informed of the advent of the commission and its purpose by the following telegram, signed by Senator Perkins:

[Telegram.]

WASHINGTON, *January 25, 1901.*

Hon. HENRY T. GAGE, Governor,
Sacramento, Cal.:

Treasury Department has appointed commission of experts not connected with any department, two of them having studied plague in China and India, familiar with it clinically and microscopically, third member having had exceptional advantages for its study. All of highest possible standing, representatives of University Pennsylvania, Chicago, and Michigan. Part of commission already on ground. They are instructed to be unprejudiced and independent, avoiding undue publicity and expressing no opinions until after report made to Washington and they are directed at suitable time to pay their respects to you. Am informed this demanded by action of other States and not inspired by immediate alarm, but that if their findings should be affirmative it will demonstrate necessity of action to prevent situation becoming critical in the future. Authorities here desirous matter should be managed with discretion both in determining situation and treating it and without giving unnecessary concern. The matter is so far confidential; has not been given to press.

GEO. C. PERKINS.

VICIOUS PNEUMONIA AT BAKERSFIELD.

The cases, suspected of being plague, at Bakersfield, were finally reported to be probably vicious pneumonia, as shown in following correspondence:

[Telegrams.]

WASHINGTON, *January 25, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Wire what conclusions have been arrived at concerning Bakersfield.

WYMAN.

SAN FRANCISCO, CAL., *January 25, 1901.*

Surgeon-General WYMAN, *Washington:*

Findings since first smear specimen have been negative. My informant returned from there says probably vicious pneumonia.

WHITE.

WASHINGTON, *January 25, 1901.*

Hon. JOSEPH D. SAYERS, Governor, *Austin, Tex.:*

Have information that microscopic examination has not developed any appearances of plague at Bakersfield and that the cases aré probably cases of vicious pneumonia.

WALTER WYMAN.

WASHINGTON, *January 25, 1901.*

Dr. EDMOND SOUCHON, *New Orleans, La.:*

Have information cases at Bakersfield probably vicious pneumonia.

WYMAN.

Following correspondence regarding commission, etc., then ensued:

[Telegrams.]

WASHINGTON, *January 28, 1901.*

Prof. SIMON FLEXNER, *San Francisco, Cal.:*

Please have commission call upon mayor to pay respects. Inform him of your orders and consider this as part of same.

WYMAN.

WASHINGTON, *January 28, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Have wired Flexner to have commission call upon Phelan at once to pay respects and inform him of their orders. See Flexner as to best method of doing this and meeting any others that you think necessary. It was understood from your telegrams that arrangements could be readily made for observations.

WYMAN.

SAN FRANCISCO, CAL., *January 28, 1901.*

Surgeon-General WYMAN, *Washington:*

Telegram received. Arrangements made satisfactory. They will see mayor and have seen city board. No trouble about seeing cases unless governor interposes, which says not.

WHITE.

San Francisco, Cal., *January 29, 1901.*

Surgeon-General Wyman, *Washington:*

Conforming to orders, have interviewed city authorities. Circumstances apparently favor investigation. Desire approval temporary expenditure about $8 per diem for securing rats in suspected district. Pathological department university grants use of private laboratory.

Flexner.

Washington, *January 30, 1901.*

Prof. Simon Flexner, *San Francisco, Cal.:*

Authorized to expend not to exceed $8 per diem for a period not exceeding seven days, unless extended by Bureau for the purpose securing rats. Express appreciation to university authorities.

Wyman.

On January 29 the governor of California, in a telegram directed to the President, took exception to the commission having been sent as follows:

[Telegram.]

State Capitol, Sacramento, Cal.,
January 29, 1901.

To the President:

I have been informed that the Treasury Department has sent a commission of experts to this State to examine the pretended plague cases heretofore reported, as well as present health conditions, which commission is now about to commence its investigation, ignoring the State authorities in the matter and proceeding in line with report heretofore made by Dr. J. J. Kinyoun to the Surgeon-General of the Marine-Hospital Service. I hope that in this matter of vital interest to the people of California there is no intentional discourtesy on the part of officers directed by the Treasury Department to supervise this investigation. In this matter, which concerns deeply the welfare of this State, I respectfully request that cooperation with the State authorities by such experts should be advised, in order that the State may select eminent home bacteriologists and physicians, as well as, if deemed necessary, bacteriologists and physicians from other States and countries, to examine the same suspected cases, so as to arrive at a correct and unprejudiced conclusion. I dislike much now to call attention to this matter, but the irreparable injury heretofore done to this State by unfair and ex parte examinations warrant this appeal.

Your most obedient, humble servant,

Henry T. Gage,
Governor of California.

To which the Secretary transmitted the following reply:

[Telegram.]

Washington, *January 30, 1901.*

Hon. Henry T. Gage, *Governor, Sacramento, Cal.:*

Replying to your telegram January 29, addressed to the President, the commission appointed by this Department embraces experts who, by reason of technical knowledge and personal experience with the disease, make it the highest possible authority. They are from great institutions of learning entirely disconnected with any Department of the Government, and are chosen from different sections of the country wholly on account of their attainments, and have been directed to call upon you for the purpose of paying their respects and acquaint you with their work. In no sense, therefore, is any discourtesy intended, and the Department desires the commission to make these investigations in its own way, unhampered by detailed instructions from the Marine-Hospital Service or any other influence. It is expected to ascertain the facts, and the Department does not feel it should hamper the commission in its method of investigating and getting at the facts. It will be independent of Dr. Kinyoun or any previous reports. Its conclusions are to be based on its own observations and will be made known to this Department alone and promptly forwarded to you by the Department.

L. J. Gage, *Secretary.*

Correspondence relative to the above matters was continued, as follows:

[Telegrams.]

SAN FRANCISCO, CAL., *January 30, 1901.*

Surgeon-General WYMAN, *Washington:*

Unless you think it better to do otherwise, expect to start, on or about February 1, to go to Portland, Oreg.; Tacoma, Seattle, Port Townsend Quarantine, and return as soon as possible—about February 15. It will take until that time to complete. As to San Francisco, have taken all necessary steps pending further orders. Everything is arranged for commission. The mayor and local board of health cordial. Will report by wire.

WHITE.

WASHINGTON, *January 31, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

The governor sent telegraph to the President January 29 to effect he has heard commission is about to investigate the sickness at San Francisco, suspected to be plague, ignoring the authorities at California, and proceeding in line with reports heretofore sent in by Joseph J. Kinyoun; trusts no intentional discourtesy, and requests they will cooperate with authorities at California; suggests eminent home authorities, or, if need be, from abroad be selected by California to cooperate. Two days before the governor had been wired by California Senator facts about commission. The Secretary of the Treasury sent reply by wire January 30 to the governor narrating the eminent authority of commission; that they, acting upon instructions from the supervising surgeon-general, were to call on the governor to pay respects and acquaint him with their work. In no sense, therefore, any discourtesy intended. The Treasury Department desires commission to be unhampered by detailed instructions from Marine-Hospital Service or any other source. It will be independent of Joseph J. Kinyoun or previous reports, and its conclusions made known to the Treasury Department only and forwarded to the governor by the Treasury Department. The Secretary of the Treasury and the Assistant Secretary of the Treasury are firm in this matter, and I believe telegram received from the governor was only such as might have been expected. You do not belong officially to commission, but being on outside you can keep me well informed as to their movements or any obstructions or undue influence which might be attempted by opposing parties, and would be ready to act as diplomatic agent if necessary to communicate with governor. I shall wire Flexner every day or two to keep in touch with him, but other matters of the same diplomatic nature I will conduct through you. With this explanation think you had better not leave at present. What do you think of it now?

WYMAN.

SAN FRANCISCO, CAL., *January 31, 1901.*

Surgeon-General WYMAN, *Washington:*

Your telegram of the 31st received. Will remain here. Commission notified governor of desire to call on him as did I on January 27. Bills introduced State legislature to-day, probably passing to-morrow on governor's recommendations, which will estop commission. As to commission ignoring him, absolutely no truth in the report. Wrote fully to-day.

WHITE.

FEBRUARY, 1901.

[Telegrams.]

WASHINGTON, *February 1, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Wire if possible provisions in bills introduced which will estop commission.

WYMAN.

SAN FRANCISCO, CAL., *February 1, 1901.*

Surgeon-General WYMAN, *Washington:*

Bills gone over to Monday. Can not get full text till to-morrow. Will then forward and wire gist. Think I can manage for best interest.

WHITE.

WASHINGTON, *February 2, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

I have decided to go to Habana Sunday night, but will keep in telegraphic communication with the Bureau and return as soon as I have read my paper [at the Pan-American Medical Congress]. Assistant Secretary will be in close touch with the Bureau and myself. Is commission working?

WYMAN.

SAN FRANCISCO, CAL., *February 2, 1901.*

Surgeon-General WYMAN, *Washington:*

Commission doing its best, awaiting death in San Francisco. I have had a consultation with the manager of one of the steamship companies; he is friendly. Regarding matter in your telegram, hope satisfactory arrangements possible. Epidemic fund of $100,000 provided for by California legislature to-day.

WHITE.

[Letter.]

SAN FRANCISCO, CAL., *February 2, 1901.*

DEAR SIR: In conformity with your orders, I beg to submit a brief report of our actions since the arrival of Professor Novy and myself on the 27th ult.

On our arrival, we found Professor Barker established in the Occidental Hotel, where he had arrived two days previously, and during which time he had informed himself of the condition of affairs relating to plague existing at this time.

The first meeting of the commission was held on the evening of the 27th and the conclusion arrived at that it would be desirable to conduct the proposed investigation in the following manner:

First. While waiting for occurrences of cases of supposed plague in human beings that rats be secured from the regions previously supposed to be infected and that these be kept under observation, and, in the event of their death, to be subjected to bacteriological examination.

Second. That the request be made to the university authorities to extend the privileges of their bacteriological laboratory to the commission.

Third. That there be established a temporary bureau in the Occidental Hotel, where anyone desiring to consult the commission or to give information would be afforded an opportunity.

These plans have been put into practical operation. Through the cooperation of the board of public works, arrangements have been completed for securing rats. Through the kindness of Prof. A. E. Taylor, a private room has been set aside in the medical school of the university in which the investigations to be made can be conducted. This room will not be accessible to anyone in the absence of the commissioners.

In carrying out the plans of the bureau, a number of gentlemen who have had experience with the disease previously existing here have been asked to meet the commission at stated intervals, which, almost without exception, they have cheerfully done. This plan has also met the demands of the local press that both sides of the controversy be given an opportunity to present their case, and it has been of advantage in supplying the data upon which the diagnoses of previous cases have been based. Naturally, before coming to any conclusion, we shall wait for opportunities for personal observation.

Conferences, pursuant to the proposed work of the commission, have been held with the mayor and city board of health and these officials have promised to afford the necessary opportunities for the study of any cases of suspected plague which may arise. Through their aid, arrangements have been made with with the police department for a thorough inspection of Chinatown. Visits have already been made to that quarter, and the houses in which the suspected cases occurred have been inspected.

No assistance can be expected of the Chinese themselves in tracing cases, while, on the other hand, their peculiar secretive habits will, if anything, tend to obstruct the obtaining of such information.

In conformity with your orders, a letter was sent to his honor the governor of the State on January 29, acquainting him with the presence and purpose of the commission and indicating its willingness to wait upon him at any desired time. Thus far there has been no reply received to this letter. You have doubtless been informed of the action of the executive of the State and the proposed legislation relative to the plague, which legislation if successful may defeat the objects of this commission.

At this writing no case of suspected plague has occurred.

Very respectfully,

SIMON FLEXNER, *Chairman.*

Surgeon-General WALTER WYMAN,
Marine-Hospital Service, Washington, D. C.

[Telegrams.]

SAN FRANCISCO, CAL., *February 4, 1901.*

SURGEON-GENERAL MARINE-HOSPITAL SERVICE, *Washington:*

University of California authorities will not permit commission to work therein. The president (of the university) objects to presence of commission at laboratory. If Assistant Secretary directs collector of customs to furnish room in Federal building, this may do. Should much prefer it to San Francisco quarantine station. Possibly valuable time will be lost unless place secured. Attorney for Six Companies pretending physicians willing to show their cases. Same thing ten months since. Trying to evade inspection by showing trivialities. If Surgeon-General absent, please see Assistant Secretary. Action urgently needed.

WHITE.

WASHINGTON, *February 5, 1901.*

SURGEON WHITE, *San Francisco, Cal.:*

The Assistant Secretary thinks it inadvisable to place commission in Federal building. Suggests that you secure proposals upon suitable quarters outside of any Government building and install equipment from San Francisco quarantine station. Transmit proposals with recommendations.

BAILHACHE,
Surgeon, for Surgeon-General.

[Letter.]

SAN FRANCISCO, CAL., *February 7, 1901.*

DEAR SIR: Since my last communication I have to report that the commission has continued to interview physicians and others concerned with or interested in the previous epidemic disease. The most important interviews have been with the representatives of the several commercial bodies of San Francisco, as follows:

Chamber of Commerce; W. E. Mighell, vice-president.
Shipowners' Association of Pacific Coast; A. M. Simpson, president.
Board of Trade of San Francisco; A. A. Watkins (per W. R. W.), president.
Merchants' Association of San Francisco; F. W. Dohrman, president.
Manufacturers' and Producers' Association; A. Sbarbaro, president.
Produce Exchange; G. W. McNear, president.
San Francisco Committee on Commerce; Wm. R. Whealer, president.

In addition this commission has been waited upon by Mr. R. P. Schwerin, vice-president of the Pacific Mail Steamship Company, and Mr. J. C. Stubbs, vice-president of the Southern Pacific Railway Company. These gentlemen propose to bring their influence to bear upon the governor and the State legislature in order to defeat the legislation now pending concerning the regulation of quarantine and the publication of the existence of certain infectious diseases in this State. They also tendered their services in arranging for a meeting and interview between the governor of the State and the commission.

The commission has also been waited upon by Mr. George A. Knight, attorney of the State board of health, who has interested himself in bringing about a meeting between the governor and the commission.

Through these several agencies the Six Companies have consented to supply a guide and interpreter, who will visit, in the company of one or more members of the commission, all of the sick in Chinatown. They have caused to be issued proclamations requesting that all cases of illness occurring among the Chinese shall be reported to them. These inspections are to begin to-day.

We believe that through these several agencies the important condition of the investigations of the commission, viz, the opening of Chinatown to thorough inspection, has been secured. We have finally been permitted to be present at several post mortem examinations upon Chinese, and to make cultures, etc., the results of which are not yet established.

Owing to certain complications, the exact nature of which is not known to us, but of which we have learned sufficient to lead us to infer the influence of Governor Gage, the laboratory at the university has been closed to us. This has necessitated the securing of other quarters, and an arrangement with the city authorities has been consummated whereby a room will be placed at our disposal. Certain apparatus and supplies will, however, need to be purchased.

I have the honor to remain, yours, very respectfully,

SIMON FLEXNER, *Chairman.*

SURGEON-GENERAL WALTER WYMAN,
Marine-Hospital Bureau, Washington, D. C.

[Telegrams.]

WASHINGTON, *February 8, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Renting quarters simply suggested. If impracticable, what plan possible? What is Commission doing? Must have immediate reply.

BAILHACHE, *Surgeon, for Surgeon-General.*

WASHINGTON, *February 9, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Text of bill and action legislature not received. Answer my telegram of the 8th.

BAILHACHE, *Surgeon, for Surgeon-General.*

SAN FRANCISCO, CAL., *February 9, 1901.*

SURGEON-GENERAL MARINE HOSPITAL SERVICE, *Washington:*

Regarding matters mentioned in your telegrams of 8th and 9th, commission obtained room through courtesy of local board of health and are proceeding. Wrote Sunday to Assistant Secretary and Surgeon-General, sending documents personal. My letters will explain fully. Situation now satisfactory.

WHITE.

ANGEL ISLAND, CAL., *February 9, 1901.*

SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington:

Bacteriologists of the local board of health report 3 fatal plague cases occurring February 5, 6, and 7. Diagnosis confirmed by bacteriological examination. You are to consider this absolutely confidential.

KINYOUN.

SAN FRANCISCO, CAL., *February 12, 1901.*

SURGEON-GENERAL MARINE-HOSPITAL SERVICE,
Washington:

Am waiting orders. Everything appears satisfactory. Think northern trip can be undertaken.

WHITE.

WASHINGTON, *February 14, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

If the commission confirms diagnosis the services of yourself may be required for consultation with the governor as to measures. Therefore doubt advisability of your immediate departure from San Francisco.

WYMAN.

SAN FRANCISCO, CAL., *February 18, 1901.*

Surgeon-General WYMAN, *Washington:*

The commission appointed by the Treasury Department, having obtained, through the representatives of the Six Companies, at the instance of the commercial interests of San Francisco, access to the sick and dead in Chinatown during the twelve days from February 5 to 16, found, among 13 who died, 6 deaths from plague. Diagnosis confirmed by bacteriological examination, anatomical and pathological signs. Three patients seen, and 2 recognized as plague before death. Six cases were found between February 5 and 12, inclusive. In one instance two patients in one house. Other four patients isolated in different premises, Chinatown. February 13 to 16 did not see any plague.

FLEXNER.

SAN FRANCISCO, CAL., *February 18, 1901.*

Surgeon-General WYMAN, *Washington:*

Having seen the governor February 16th, the secretary of the California board of health and other officials think it best for commission to proceed to Sacramento, seeing and conferring with the governor immediately; that you inform him, and indeed, if circumstances will allow you to authorize me coincidently as your agent or the agent of the Secretary, to convey the information to the governor, who can not make use of the code. Publicity will be avoided, which think is very desirable, as there is an uneasy feeling prevailing, and this will make the conditions as easy as possible. Hereafter think you had better arrange as suggested, because much better results will follow; also think it best to have another conference with the commercial interests of San Francisco for the same reasons.

FLEXNER.

WASHINGTON, *February 18, 1901.*

Prof. SIMON FLEXNER, *San Francisco, Cal.:*

Proceed immediately to Sacramento and inform the governor that diagnosis has been confirmed and inform no one else. White has been instructed to confer with governor also. Upon completing mission return to San Francisco, report your arrival by wire, and await orders.

WYMAN.

CORRESPONDENCE WITH THE GOVERNOR.

On February 18 a telegram was sent by the governor of California to the President, complaining that the commission's investigation was unfair, as California was not represented thereon, and requesting a reinvestigation, with commission composed half of State and half of Federal appointees. This proposition being declined, the governor then asked that final action upon findings of the commission be not taken until he himself, or his representatives, could come to Washington to consult with Federal authorities. Following is the correspondence covering this period:

[Telegrams.]

SAN FRANCISCO, CAL., *February 17, 1901.*

The PRESIDENT,
Executive Mansion, Washington, D. C.:

In reply to my telegram to you of date January 28, I received from Secretary Gage telegram as follows:

WASHINGTON, D. C., *January 30, 1901.*

Hon. HENRY T. GAGE,
Governor, Sacramento, Cal.:

Replying to your telegram January 29, addressed to the President, the commission appointed by this Department embraces experts who, by reason of technical knowledge and personal experience with the disease, make it the highest possible authority. They are from great institutions of learning entirely disconnected with any department of the Government and are chosen from different sections of the country, wholly on account of their attainments, and have been directed to call upon you for the purpose of paying their respects and acquaint you with their work. In no sense, therefore, is any discourtesy intended, and the Department desires the commission to make these investigations in its own way, unhampered by detailed instructions from the Marine-Hospital Service or any other influence. It is expected to ascertain the facts, and the Department does not feel it should hamper the commission in its method of investigating and getting at the facts. It will be independent of Dr. Kinyoun or any previous reports. Its conclusions are to be based on its own observations and will be made known to this Department alone and promptly forwarded to you by the Department.

L. J. GAGE, *Secretary.*

On January 31 I received from one of the experts referred to in said dispatch a letter, a copy of which is as follows:

OCCIDENTAL HOTEL,
San Francisco, Cal., January 29, 1901.

Hon. HENRY T. GAGE,
Governor of California, Sacramento, Cal.

DEAR SIR: You have doubtless been informed from Washington that the Federal Government (Treasury Department) has appointed Prof. Simon Flexner, of the University of Pennsylvania, Prof. Frederick G. Novy, of the University of Michigan, and Prof. Lewellys F. Barker, of the University of Chicago, as a special commission to ascertain the existence or nonexistence of plague in San Francisco or in other ports or places in the State of California. Among the orders given to the commission is one stating that the members of the commission are to pay respects on a suitable occasion to the governor of the State. The members of the commission respectfully indicate, therefore, that they hope to have the opportunity during their visit here to do themselves the honor of paying their respects to you. In the meantime the members of the commission are undertaking their investigations with as little publicity as possible. They will be grateful for aid of any sort from any source. The investigations are to be from the beginning unprejudiced and independent.

I have the honor to be, sir (for the commission),
Yours, very truly,

LEWELLYS F. BARKER, *Recorder.*

I replied thereto on February 2:

STATE CAPITOL, *February 2, 1901.*

Prof LEWELLYS F. BARKER,
San Francisco, Cal.

SIR: By direction of the governor, I have the honor, in his behalf, to acknowledge the receipt of your communication, dated January 28, 1901, in which you state that the members of the special commission appointed by the United States Treasury Department "Indicate that they hope to have the opportunity, during their visit here, to pay their respects to the governor." The governor expresses his appreciation of the honor, and begs leave to state that he will be pleased to receive the members of the Commission, at the State capitol, at such time as the members may deem proper.

Your obedient servant,

W. I. FOLEY, *Private Secretary.*

I heard nothing further from the commission or its members until February 13, when I received following letter:

OCCIDENTAL HOTEL,
San Francisco, Cal., February 12, 1901.

The Hon. HENRY T. GAGE,
Governor State of California.

DEAR SIR: The members of the commission appointed by the Treasury Department at Washington are very desirous of having the opportunity of calling upon you, and would esteem it a favor if you would indicate a time and place at which they may have the honor of paying their respects to you.

Most respectfully,

SIMON FLEXNER.
F. G. NOVY.
LEWELLYS F. BARKER.

Immediately upon receipt of said communication I answered same as follows:

STATE CAPITOL, *February 13, 1901.*

Prof. SIMON FLEXNER, Prof. F. G. NOVY, Prof. LEWELLYS F. BARKER,
Occidental Hotel, San Francisco, Cal.

SIRS: By direction of the governor I have the honor to acknowledge the receipt, this day, of your esteemed communication dated February 12, 1901, in which you express your desire that the governor should indicate a time and place at which you may pay your respects to him, and in response thereto, the governor expresses his appreciation of your courtesy, and begs leave to say that he will be pleased to receive you at a place more convenient to you than that indicated in a reply to your previous letter, namely, in San Francisco, at room 380, of the Palace Hotel, on the first floor, on next Saturday afternoon, at 2 o'clock p. m., on which day the governor will be in San Francisco on State business and he trusts that such time and place may meet with your approval.

I have the honor to be, sirs, your most obedient, humble servant,

W. I. FOLEY, *Private Secretary.*

The time and place last appointed was the first opportunity given me to meet the members of the commission. At this interview I tendered these gentlemen every assistance the State could render them in the premises, and expressed the desire to be permitted to investigate the question at issue jointly with them. To-day, however, they inform me that their report will be ready for transmission to Washington to-morrow. Thus the State has been denied every participation in this investigation, while at the same time the commissioners have been constantly aided by Dr. Kinyoun's assistant. This the commissioners admitted in their interview with me yesterday. Should their report to the Department state that the plague exists here such conclusion will be regarded by our people as the result of an unfair, unjust investigation.

Before such report receives the approval of the Federal authorities at Washington, or be made public, I most earnestly and respectfully request that a reinvestigation be had at once, in which case the Government may appoint three commissioners and the State of California three others, all to have power to select a seventh member in case said commission be equally divided in opinion. The decision of such a commission would and should be regarded and treated by every one as decisive. If this most important but humble request be denied us, then we respectfully submit that before the commissioners' report be made public, and prior to taking any action thereon, the representatives of this State to be sent from here should be accorded a personal hearing in Washington, to the end that undue alarm and consequent injury may be avoided.

Whatever differences of opinion may at this time exist as to the existence or nonexistence of plague, no one can honestly be of the opinion that the disease is epidemic in San Francisco, nor can anybody seriously contend that ample protective and preventive measures can not be taken in the premises without even spreading great or any alarm among the people and without disturbing our commercial affairs. I take pleasure in assuring you, notwithstanding anything that may have been said to the contrary, that California wishes to cooperate with the Federal authorities in this most important matter, having in view not only our own but the welfare of the whole people, and I implore you to afford our State an opportunity for such cooperation.

Your most obedient and humble servant,

HENRY T. GAGE,
Governor of California.

WASHINGTON, *February 19, 1901.*

His Excellency the GOVERNOR OF CALIFORNIA,
Sacramento, Cal.:

Replying to your telegram of the 17th instant to the President, while the Department does not deem it necessary to join in a new commission, as you propose, it is not its purpose to make public the report of the present commission till you are advised of its purport, and even then the matter will be very seriously considered before any action is taken. The Department is in accord with you in your desire to prevent unnecessary alarm and to consider measures with the least possible publicity or disturbance of commercial affairs, and will pursue this policy both with regard to its commission in California and its action at this end; in other words, it will endeavor to prevent undue publicity and desires to, if possible, avoid publishing any report. The Department accepts with pleasure your suggestion to send a special representative of the State, believing he can familiarize himself with the situation here and trusting it will result in cooperation.

L. J. GAGE, *Secretary.*

WASHINGTON, *February 19, 1901.*

Prof. SIMON FLEXNER, *San Francisco, Cal.:*

Referring to my telegram of the 18th, directing you to call on the governor, you are informed that the governor has requested reinvestigation with a mixed commission, which the Treasury Department has declined; but governor suggests that if this could not be granted, publication of the report be deferred until agent of the governor be sent to Washington, D. C. The Treasury Department has urged the governor to send his agent immediately, and will endeavor to avoid the publication of the findings of the commission until such time as the facts may be made known without exciting undue alarm.

WYMAN.

SAN FRANCISCO, CAL., *February 19, 1901.*

Surgeon-General WYMAN, *Washington:*

One hundred thousand dollars appropriated February 18, at disposal of governor, available either for combating the plague or assailing diagnosis thereof. Commission waiting. Have you any orders for them?

WHITE.

CAPITOL, SACRAMENTO, CAL., *February 19, 1901.*

Hon. LYMAN J. GAGE,
Secretary of the Treasury, Washington, D. C.:

Referring to your esteemed telegram of this date, in order that all questions might be completely disposed of without delay or further embarrassment, I would prefer before any action be taken upon the report of Federal special commission by the Department to personally present the matter to your Department, rather than through the medium of persons to be sent from this State as representatives; but it will be impossible for me to leave here before the latter part of March, owing to the present session of our legislature. Please inform me if such course would meet with approval of all concerned and if action upon the report can be deferred until that time.

HENRY T. GAGE,
Governor of the State of California.

SAN FRANCISCO, CAL., *February 21, 1901.*

Surgeon-General WYMAN, *Washington, D. C.:*

Your telegram of 19th received. Commission proceeded February 20th to Sacramento to call on the governor and gave him information according to instructions. Believe it is certain governor is convinced that diagnosis confirmed. The governor suggested having Treasury Department take charge of the work at San Francisco, since he considers it necessary for the satisfaction of California and her sister States. He suggested postponing action until after March 20 when he could go to Washington and arrange with the Treasury Department personally, but I insisted that it is very important to act quickly through the medium of Joseph H. White. I suggest that a judicious exercise of care in selecting the proper persons for employment will remove the difficulty. Skill and diplomacy are absolutely necessary, but advise strongly that the Treasury Department take charge of the work in California provided California says it desires the assistance of the service. I await orders.

FLEXNER, *Chairman.*

SAN FRANCISCO, CAL., *February 21, 1901.*

Surgeon-General WYMAN, *Washington:*

Offer is made by the governor of California to me February 20 for Treasury Department take charge of the work at San Francisco, saying he thinks that would be on much higher plane for satisfying California and sister States than with the State or local regulations, plan to be as outlined yours January 9. Governor says you are to consider this absolutely confidential regarding diagnosis confirmed for present and that he desires me placed in charge of all service operations in connection with, which I do not, but I advise you strongly to send immediate favorable response to me when the governor will request the Secretary of the Treasury to take charge of the work at San Francisco. We must be fully protected in this matter by telegraphic request from the governor. The governor thinks Judge Morrow will modify decisions. I concur in the recommendations of the commission.

WHITE.

WASHINGTON, *February 21, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

On receipt of request from the governor affairs will be put in your hands. Kinyoun will be expected to conduct maritime quarantine only, as it must engage his whole time in view of returning troops. Arrangements should be made for harmonious action between the governor, State board of health, local board of health, mayor, and yourself. The main expenses should be provided for by State and local authorities, but medical appointments should be made by you and salaries of medical appointees should be paid by Department, and Department may render bill later for reimbursement, but even if no reimbursement this principle believed to be necessary. Very desirable also that all other pay rolls should be under your control, and perhaps funds can be placed in your hands for this purpose by governor or municipal authorities or commercial interests. As to regulations, formulate what you think necessary and forward to Bureau for issue. As a suggestion merely it might be well to form a board, yourself chairman, with representative of State board of health and one from local board of health. Bureau regrets being deprived of your services here, but circumstances demand this detail. Believed work can be put in operation without publication. Commission will be held for day or two longer; see telegram to Flexner.

WYMAN.

WASHINGTON, *February 21, 1901.*

His Excellency the GOVERNOR OF CALIFORNIA,
Sacramento, Cal.:

Replying to your telegram of February 19, the Department believes that in view of all the facts presented to you by its agents you will concur in the opinion that delay of action until the latter part of March is inadvisable. The Department sincerely regrets your inability to immediately come or send a representative, but believes that its accredited agents have made plain that its wishes in the matter are in accord with your own, particularly in avoiding publicity and the management of affairs with the least possible detriment to commercial interests and without causing unnecessary apprehension. Surgeon White has informed the Department of a recent interview with you and your wishes in the matter of Department Service, concerning which the Department would be glad to hear from you further, with a view to a favorable response.

L. J. GAGE, *Secretary.*

San Francisco, Cal., *February 21, 1901.*

Surgeon-General Wyman, *Washington:*

Regarding matter mentioned in your telegram as to details, am sure governor, who has $100,000 fund, will decline cooperation under terms named and possibly attempt refutation. Will not see him till you answer this. Believe whole load must fall on Marine-Hospital Service. Answer quickly.

White.

Washington, *February 21, 1901.*

Surgeon White, *San Francisco, Cal.:*

Secretary has wired the governor as follows: (Here is quoted the above telegram to the governor beginning "Replying to your telegram of February 19," etc.) Confer again with governor and impress on him that the Treasury Department must have a formal request from him. You may inform him that if affirmative action is taken J. H. White will be put in charge; that Dr. Kinyoun's whole time will be occupied by strictly maritime quarantine work, and it is not expected under the circumstances to call him into active municipal work.

Wyman.

Washington, *February 21, 1901.*

Surgeon White, *San Francisco, Cal.:*

Orders to visit the governor suspended until I wire again, probably to-morrow. The details and terms wired to-day were partly suggestive only and not necessarily absolute. Matter will be considered with the Secretary of the Treasury and others. In meantime, if you have any suggestions wire them.

Wyman.

Washington, *February 21, 1901.*

Prof. Simon Flexner, *San Francisco, Cal.:*

Telegram received with satisfaction. See two telegrams to White. Desire Novy, Barker, and yourself to remain in San Francisco two or three days, while matters are being arranged with the governor. At present it is not desired to have commission present matters to commercial interests, but there is a possibility of its being necessary. Have you sent full report by mail?

Wyman.

San Francisco, Cal., *February 22, 1901.*

Surgeon-General Wyman, *Washington:*

It is rumored that the governor's supporters believe that the commission has been working conjointly and unfairly with Marine-Hospital Service, and while the governor does not appear to entertain similar views, the commission believes it possible that the governor might use the $100,000 to resist the diagnosis unless Treasury Department undertakes all incidental expenses and takes charge of the work in San Francisco. In order to avoid serious results and perhaps the loss of valuable time, and though perhaps at great expense, I advise you strongly that the Treasury Department assume full charge and responsibility. The commission believes it is very important, for international reasons, that both California and Federal authorities ought to agree to frankly admit that the diagnosis is confirmed to the general public, accompanying such admission with the statement that Treasury Department is taking all necessary precautions to control promptly and energetically, and that there would seem to be no occasion for alarm. Full report in a day or two.

Flexner, *Chairman.*

San Francisco, Cal., *February 22, 1901.*

Hon. Lyman J. Gage,
Secretary of the Treasury, Washington, D. C.:

Governor Gage gone to Los Angeles to attend funeral of late Senator White. He will return Sunday. Immediately upon his return I will hand him your dispatch, date February 21st.

W. H. Davis, *Executive Secretary.*

SAN FRANCISCO, CAL., *February 23, 1901.*

Surgeon-General WYMAN, *Washington:*

If in Washington I can explain fully matters not possibly explainable by telegrams; therefore beg immediate authority to go.

WHITE.

WASHINGTON, *February 24, 1901.*

Surgeon WHITE, *San Francisco, Cal.*

Regarding matter mentioned in your telegram of February 23, can not understand your request in view of special arrangement with me for telegraphing. If absolutely necessary, you should send a matter of great importance at once by telegraph. If the matter is sufficiently important, can send M. J. White on request from you. The Treasury Department is awaiting telegraphic reply from the governor to its telegram of February 21. Private secretary of the governor wired that the governor had gone to Los Angeles and would expect to be back at Sacramento February 24. Patience is required, but Treasury Department has great power in reserve, and California Senators will cooperate, as will eventually commercial interests of San Francisco and the steamship companies. See Flexner and inform him matter of announcement referred to in his telegram of the 22d is deferred. This is the situation at the present writing, but it may change at any moment.

WYMAN.

SAN FRANCISCO, CAL., *February 24, 1901.*

Surgeon-General WYMAN, *Washington:*

Referring to your telegram of to-day, M. J. White can't help me now; later, yes. Can not express thus full meaning, but believe the governor (who, it is rumored, is trying to make political capital out of the matter) will arrange, if he can possibly do so, for refutation, unless the Treasury Department takes such steps as are necessary to coerce admission of the diagnosis, because he says he believes it is not so, to be consistent. I do not believe he will ever say he believes the diagnosis is confirmed. The commercial interests will cooperate certainly, if informed, but have not been. I doubt others. The governor has been in San Francisco since February 20. Net results may be to place cordon around San Francisco at once, instead of what you propose, if truly trying to make political capital out of the matter.

WHITE.

SACRAMENTO, CAL., *February 25, 1901.*

Hon. LYMAN J. GAGE,
Secretary of Treasury, Washington, D. C.:

In reply to your dispatch of date February 21, you are aware that a dispute originally arose between the Federal authorities and the State authorities in reference to health conditions of California, and whereas, since then the Federal authorities have made investigations in which the State authorities were not allowed to participate, and whereas the commissioners who prosecuted the investigations for the United States under such circumstances have concluded that the health conditions at San Francisco need certain attention, and whereas heretofore I expressed my views in regard thereto by message to the legislature of California, still, in view of all the circumstances and conditions, believing that it will be for the best interest of all concerned, first having been assured by your office that your Department would take the steps hereinafter referred to, if requested and in the performance thereof would, among other things, be particular to avoid publicity and that the management would be pursued with the least possible detriment to our commercial interests; and believing that, if the Federal authorities be given control in the premises all other States of the Union may be better satisfied, and that all general quarantine of this State and of its cities will thereby be avoided, and that all quarantine of other States against this State may be avoided, and so forth; I therefore respectfully request the United States authorities to take charge of the matter within this State and deal with the situation from the standpoint of the report of its commissioners, but without cost or charge to this State, at the same time assuring you of my hearty cooperation, I thank you for your courtesy and await your reply.

HENRY T. GAGE,
Governor of the State of California.

WASHINGTON, *February 26, 1901.*

His Excellency the GOVERNOR OF CALIFORNIA,
Sacramento, Cal.:

Acknowledging receipt of your telegram of the 25th, the Department wishes to express its appreciation of your courteous attitude in the matter under consideration and desires to submit to you the following suggestions, namely, that in the work to be performed, while all ordinary expenses incurred in the payment of its own officers may be met by the Department, under the law and in accordance with usage the chief burden should be borne by the city of San Francisco. The mayor and other necessary local authorities should be notified, as were you, with a view to an understanding as to this matter. No municipality has ever depended financially upon the Government under like circumstances, though there have been numerous parallel cases during epidemics of yellow fever. Even if the Department should be willing, contrary to its announced policy, the matter would have to be brought before Congress for an appropriation, which is now practically impossible, and would, moreover, give undue publicity. Surgeon White will be the agent of the Department in charge of the whole situation, which, in view of the return of troops in the near future from the Philippines through San Francisco, will be doubly necessary. Please answer as to above suggestions.

L. J. GAGE, *Secretary.*

WASHINGTON, *February 26, 1901.*

Hon. HENRY T. GAGE,
Governor of California, Sacramento, Cal.:

We have seen your dispatch of February 25 to the Secretary of the Treasury and are gratified at your evident desire to bring about a cooperation between the national, State, and local authorities, but believe it will be a mistake to attempt to have Treasury Department bear all the expenses. Surely San Francisco is able to raise the necessary funds. We fail to see how the Treasury Department can take any other position than it has taken in view of the reports for some time past of its own officers, of a commission of University experts which it will shortly dissolve, and in view of the reports which we learn it is receiving (three within the past month) from the official authorities of San Francisco. We earnestly advise, therefore, that the friendly cooperation which the Treasury Department is evidently endeavoring to bring about be helped along by yourself, and are convinced that such action on your part will receive general commendation.

GEO. C. PERKINS,
THOS. R. BARD,
United States Senators.

WASHINGTON, *February 26, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

The Governor has wired in response to the Secretary's telegram of February 21 reciting previous views but finally requesting United States authorities to take charge, but without cost to the State and assuring cooperation. The Secretary replied to-day to the effect that San Francisco should bear the chief burden and suggesting that the mayor be notified in same manner as the governor. Both senators from California have wired the governor advising cooperation in this manner. Show this to Flexner and say to him Department will appreciate commission's services in waiting a day or two longer, reason for which is shown in foregoing.

WYMAN.

SAN FRANCISCO, CAL., *February 26, 1901.*

Surgeon-General WYMAN, *Washington:*

Telegram received. Don't think San Francisco will consent unless local health authorities are in charge. Doubt if the governor follows advice regarding the mayor. Previous results make work by local board of health doubtful utility. Will inform Flexner. I know they will wait.

WHITE.

State Capitol, Sacramento, Cal., *February 27, 1901.*

Hon. Lyman J. Gage,
Secretary of the Treasury, Washington, D. C.:

There has evidently been a misunderstanding between your Department and myself, otherwise you would have accepted the proposition contained in my last dispatch, which I understood conformed with the views of your Department. Now, to avoid all complications and delay, I have this day appointed four distinguished citizens of this State to personally confer with you on the subject of your suggestions. They leave the 2d proximo direct for Washington. I am confident that all matters will be satisfactorily arranged.

Henry T. Gage, *Governor.*

San Francisco, Cal., *February 28, 1901.*

Surgeon-General Wyman, *Washington:*

As near as I can ascertain, Attorney George S. Knight, member of the California board of health, expected to start for Washington, D. C., February 26. Can learn nothing at all about mission. Do not know party well enough to express any opinions. Advise be very careful in dealing with him. The report of Joseph J. Kinyoun shows that possibly plague is now present in Sacramento. One passenger from there taken sick after two days in San Francisco.

White.

San Francisco, Cal., *February 28, 1901.*

Surgeon-General Wyman, *Washington:*

The governor of California telephoned me the correspondence, expressing dissatisfaction and saying that four commissioners expect to start for Washington March 2, but suggested myself instead thereof. I demurred, believing it wiser to proceed immediately to Washington alone for Treasury Department. California feels that San Francisco, being the western gateway of the continent, is entitled to the consideration of the Treasury Department in broader sense than usual. Think it unlikely that San Francisco and California will cooperate. Am keeping in touch with all proper parties.

White.

MARCH, 1901.

[Telegrams.]

Washington, *March 1, 1901.*

Surgeon White, *San Francisco, Cal.:*

Your telegram of the 28th received. That portion concerning request of the governor and your recommendation concerning same not understood. Send further details.

Wyman.

San Francisco, Cal., *March 1, 1901.*

Surgeon-General Wyman, *Washington:*

I wired that Governor Gage would send four gentlemen to Washington, and he suggested that possibly I might go instead, but I told him it was better that I do not go as emissary of his side of case, though I do recommend going as Treasury representative.

White.

San Francisco, Cal., *March 1, 1901.*

Surgeon-General Wyman, *Washington:*

Absolutely necessary that I return Philadelphia earliest practicable moment. Request be relieved and transportation.

Flexner.

ANGEL ISLAND, CAL., *March 1, 1901.*

Surgeon-General WYMAN, *Washington:*

Reliable information received February 28 that attorney Southern Pacific, president Pacific Mail Steamship Company, and managers two leading dailies proceeded to Sacramento on special train where secret conference was held with the governor, the result of which conference is that no paper in San Francisco is to make mention of results of commission's investigation, whatever they may be, and attorney Southern Pacific, managers Chronicle, Examiner, representative Union Iron Works to leave San Francisco for Washington, D. C., March 2, to appeal to the President suppress any report differing from the governor California. Attorney the State board reported now en route, Washington, D. C., assist removal J. J. Kinyoun. Resolutions California legislature somewhat mixed, the governor using every means to have them passed. Will not try to discover the truth if he can escape doing so. Another case plague, dead, February 26. Diagnosis confirmed by bacteriological examination laboratory here. Believe to have come from Sacramento.

KINYOUN.

WASHINGTON, *March 2, 1901.*

Professor FLEXNER, *San Francisco, Cal.:*

With other members of the commission call upon the mayor and give him results as you did to the governor. Confer with the mayor as to conveying information in same manner to some prominent representative of commercial interests, with a statement to both parties that it is considered very essential that it be confidential and no publication at present time. Wire when this duty performed.

WYMAN.

WASHINGTON, *March 3, 1901.*

KINYOUN, *Angel Island, Cal.:*

Your telegram March 1 received. Information appreciated. Treasury Department and Marine-Hospital Service amply prepared.

WYMAN.

WASHINGTON, *March 3, 1901.*

WHITE, *San Francisco, Cal.:*

See telegrams to Flexner. The Assistant Secretary of the Treasury and myself strongly of opinion absolute necessity you remain in San Francisco, and if representatives of governor present matters in Washington, D. C., requiring further elucidation from you you can then be ordered.

WYMAN.

SAN FRANCISCO, CAL., *March 4, 1901.*

Surgeon-General WYMAN, *Washington:*

Conferred with the mayor and the commercial interests of San Francisco. Cooperation highly probable among the mayor, the governor, the commercial interests of San Francisco, and the Treasury Department. Joseph H. White conferred later with the mayor. Leave here Tuesday, stopping couple days in southern California.

FLEXNER, *Chairman.*

REPORT OF THE COMMISSION OF EXPERT DIAGNOSTICIANS.

On March 6 the following report, verifying the diagnosis of plague, was received from Professors Flexner, Barker, and Novy, composing the commission appointed by the Secretary of the Treasury, January 19, for the investigation of the existence or nonexistence of plague in San Francisco:

REPORT OF COMMISSION.

San Francisco, Cal., *February 26, 1901.*

Sir: The special commission appointed by the honorable the Secretary of the Treasury for the purpose of ascertaining the existence or nonexistence of bubonic plague in San Francisco or other ports or places in the State of California, under instructions furnished by the Surgeon-General of the United States Marine-Hospital Service, begs leave to submit the following report:

In accordance with instructions received, the members of the commission proceeded as early as possible to San Francisco, one of them (Dr. Barker) arriving on Friday, January 25, 1901, the other two (Dr. Flexner and Dr. Novy) on Sunday, January 27.

The first formal meeting of the commission was held at the Occidental Hotel shortly after the arrival of all the members. At this meeting it was decided, in accordance with your instructions, to call and pay our respects to the honorable the governor of the State, to place ourselves in communication with the local authorities in order to obtain facilities for the examination of the sick and dead in Chinatown, or elsewhere should suspected cases arise, and to arrange for a laboratory in which pathological and bacteriological examinations could be undertaken.

Owing to the miscarriage of a letter sent to the commission by the honorable the governor of the State, the call of your commissioners upon him was delayed until Saturday, February 16. On this date, however, they had the privilege of paying their respects to the governor and of informing him of their orders. The governor received your commissioners most courteously and stated that the authorities in California desired to facilitate by every means in their power the investigation concerned.

A call was also made upon the mayor of the city of San Francisco and upon the president of the city board of health, both of whom offered to aid, in any way possible to them, the work of your commissioners. The city board of health supplied the commission with a map of Chinatown, on which were charted the location of cases which the board had examined and regarded as plague.

During the first fifteen days of our visit a bureau was opened in the Occidental Hotel; the commission met at 11 o'clock daily, and it was announced in the press that its members would be glad to confer with anyone who had information to give with regard to the existence or nonexistence of plague in the city. In addition, letters were sent to a number of physicians in town requesting an interview. The majority of those written to responded; opinions were divided, some of the physicians being confident that plague existed, others being sure that the disease was not here. The establishment of this bureau proved to be of great service, not so much in affording us information about plague as in putting us into relation with the medical and business interests of the city. Through it a plan of work became easy to formulate; through it we learned how to gain access to the sick and dead Chinese and how to proceed without exciting the opposition or suspicion of those among whom we were to work.

The representatives of the principal commercial interests of the city of San Francisco, including the Merchants' Association, the Manufacturers and Producers' Association, the Board of Trade, the Pacific Coast Jobbers and Manufacturers' Association, the Chamber of Commerce, the Pacific Mail Steamship Company, and the Southern Pacific Railway, called upon the commission, welcomed them to California, and offered their aid. Through the courtesy of Colonel Mendel, room 161 of the city hall, previously used as a license office, was put at the disposal of the commission. It was fitted out as a laboratory, the outfit being purchased new in San Francisco.

INSPECTIONS OF THE CHINESE SICK AND DEAD.

The attorney of the Chinese Consolidated Benevolent Associations (ordinarily known as the Chinese Six Companies) advised the Chinese to cooperate with the commission. As a result, proclamations were issued ordering the Chinese to report all cases of sickness and death, no matter what the cause, to the offices of the Chinese Six Companies in order that daily inspections might be made. Mr. Wong Chung, the secretary of the Six Companies, accompanied a member of the commission (Barker) daily to each house whence a report had been made, aided in finding the cases, acted as interpreter, and assisted in obtaining the necessary histories. It is believed by the members of the commission that the Chinese Six Companies acted in good faith and that they made every attempt to give access to the sick. Certain cases of sickness, it is true, were not reported and were not known of until the dead bodies were found, but this, it is believed, was due to negligence on the part of the Chinese concerned rather than to any attempt at concealment.

The daily inspections of the sick and dead permitted of observations relative to the mode of life of the people in the 14 blocks of San Francisco which make up "Chinatown." These observations were extended by special trips of inspection under the guidance of officers of the city detective force and by numerous independent trips of inspection made by your commissioners.

The dwellings of the poorer classes of Chinese were found to be here, as they seem to be everywhere, shockingly unsanitary. In places there is marked overcrowding; the rooms are small; they are often entirely devoid of light or means of ventilation, and nearly always insufficiently lighted and ventilated; many of them are filthy; some of them, especially those situated in basements, are damp and emit a foul stench. These faults in sanitation are not confined to the tenement houses of the Chinese; on the contrary, in the rear of, or over or under, some of the more pretentious business buildings are to be found sleeping and living apartments which are most objectionable from a sanitary point of view.

The Chinese in San Francisco are, however, in many respects much better off than are their countrymen in great native centers like Canton, or even than those in a city like Hongkong. There is almost an entire absence of the utter destitution met with among many of the Chinese in Asia. The Chinese in San Francisco are, on the whole, very well fed, for wages are high and food is abundant and cheap. They are also well clothed as a rule, and particular emphasis is to be laid upon the fact that the Chinese here wear shoes, stockings, and trousers, since it is believed by many that the bare legs and feet of the Chinese in Hongkong and Canton had much to do with the frequency of infection with plague in those places.

A large percentage of the Chinese in San Francisco, it is said, smoke opium. There are a number of Chinese prostitutes, but inspection of the quarters occupied by the latter would indicate that the rooms in which they live are, on the whole, more wholesome as regards air space, light, ventilation, and cleanliness than those of the other inhabitants of the district.

On Wednesday, February 6, 1901, systematic daily rounds of visits were made by one of the commissioners in company of Mr. Wong Chung to the rooms of the sick as reported each day to the offices of the Chinese Six Companies. Rapid clinical examinations were made and notes kept of the results. A number of the cases met with were obviously instances of advanced tuberculosis; others were affected with various chronic diseases. Such cases, being of no interest for the investigation, were visited only once. When patients were found who presented symptoms which were suggestive of plague, a careful examination was made. In doubtful cases the first visit was followed by others and the progress of the illness carefully watched. These regular visits of daily inspection were maintained until February 16, 1901, during which period a sufficient number of instances had been observed to permit your commissioners to conclude beyond possible doubt that cases of bubonic plague were occurring among the Chinese.

Inspections of the dead in Chinatown were also made daily by the same member of the commission, beginning February 5, 1901. Access to the dead was gained in two ways. In the first place the assistant city physician, Dr. F. P. Wilson, makes the rounds of the undertaking establishments in Chinatown each forenoon. He inspects the bodies of the dead, and where necessary advises a pathological and bacteriological examination by Dr. Kellogg, the bacteriologist of the city board of health. Permission was obtained from these gentlemen for the making of simultaneous and independent inspections and of pathological and bacteriological examinations by the commission.

A second mode of access to the dead was that afforded by the reports made by the Chinese directly to the offices of the Six Companies. By this mode it was in some instances possible to learn of the death of individuals and to make inspections of bodies before the city officials were informed of them.

From February 5 to February 16, 13 dead Chinese were inspected, as follows:

Death 1 (inspected February 5).—Chun Ah Chou; age, 44; actor; died this morning in Washington Street Theater. Body well nourished; two or three dark bluish spots on legs (possible hemorrhages). On palpation of the neck, axillæ, and groins some enlargement of the lymphatic glands of the left groin was made out, though nothing corresponding to an outspoken bubo was visible. Inspecting commissioner advised a pathological and bacteriological examination in order to remove all doubt as to the nature of the case. The results proved the case to be one of infection with plague (*vide infra*—laboratory case 1).

Death 2 (inspected February 5).—Wong Koong Chin; elderly Chinese male; died at 6a Waverly place; history of dyspnœa and cyanosis for a long time before death. There is marked œdema of legs; no enlargement of lymphatic glands ascertainable on palpation. Death certificate signed by city physician as due to valvular disease of the heart. Case was not regarded as suspicious and no pathological or bacteriological examination was insisted upon.

Death 3 (inspected February 5).—Lee Kee; middle-age Chinaman; found dead at 917½ Stockton street. This man had been visited by members of the commission two nights before, the case having been reported to them as one suspected of being plague. Neither when seen during life nor on inspection after death was anything seen which pointed to infection with plague. No enlargement of lymphatic glands could be made out. A pathological and bacteriological examination was, however, deemed advisable for purposes of exclusion. The results as regards plague were negative (*vide infra*—laboratory case 2). The assistant city physician attributed the death to intestinal obstruction.

Death 4 (inspected February 6).—Fong Sha Song; coolie; age, 56; found dead in "hall of tranquillity" at rear of 1111 Stockton street. No available history of condition *intra vitem;* body filthy; œdema of legs; no enlarged lymphatic glands; no visible hemorrhages; pathological and bacteriological examinations advised for purposes of exclusion. Results negative as regards plague (*vide infra*—laboratory case 4). Death attributed by city physician to interstitial nephritis.

Death 5 (inspected February 6).—Lum Hong Yuen; died in room 15, third floor, at 28 Ross alley. Body found at Main Fook's undertaking establishment, at 740 Pacific street. Through Mr. Wong Chung, the secretary of the Six Companies, a school teacher who knew deceased stated that the man had been ill about three weeks; that he had been a cook and waiter in the Chinese theater up to three weeks ago, when he quit work on account of chancre and bubo; that since then he has been in his own room in Ross alley; that four or five days before his death he was given medicine by a Chinese doctor for a chill; that said medicine was too strong for the patient, and that "his breathing stopped and he died."

On inspection of the body no evidence of chancre could be found; in the inguino-femoral region a large mass of swollen conglomerated lymphatic glands could be felt. The swelling was so like similar swellings previously observed in cases of plague in Hongkong and in India that the case was regarded as almost certainly one of plague. Pathological and bacteriological examinations were made at once; the results proved the correctness of the impression gained from inspection (*vide infra*—laboratory case 3).

Death 6 (inspected February 7).—Wong Chi Lui; age, 45; cigar maker, who had worked at 418 Battery street; found dead at 18½ (21½) Waverly place. Through Mr. Wong Chung it was ascertained that the man had been ill for about two weeks, complaining of fever, loss of appetite, and general uneasiness. He had had pains in groins and lower abdomen, to which region a Chinese doctor had applied honey and salve. No history of venereal disease. For three or four days prior to death the man was unconscious. When chided by Mr. Wong Chung for not having reported the case earlier to the Six Companies, the brother of the deceased said he had not made a report because he had believed that the patient would soon be well.

On inspection and palpation a large mass of swollen glands was discovered in the left inguino-femoral region. It seemed likely that the case was one of plague, and the friends of the deceased were notified that an examination of the body would be made immediately. The pathological and bacteriological examination established the death as one due to infection with bacillus pestis (*vide infra*—laboratory case 5).

Death 7 (inspected February 11).—Tom Shom; male; age, 51; actor in Chinese theater; room above theater, at 814 Washington street, near room of late Chum Ah Chou (see death 1). This man was reported as ill to the Six Companies, and was examined clinically on Friday, February 8, by Dr. Barker, who obtained the following history: The man had been acting in the theater about two weeks before, although it had been stated that he had not been very well for from six to seven months previously. On February 4 he became seriously ill with fever and delirium. There had been some vomiting. The urine, as observed by the attendant, was described as brandy colored. He had a Chinese doctor in attendance, and his friends had not considered him ill enough to make a report to the Six Companies worth while. The man smoked about 50 cents' worth of opium daily. On clinical examination the patient was found lying upon his back in bed, with legs drawn up. He was in a state of semistupor. His pulse was 108, quick, rather full, but of low tension. The skin was hot and dry. Respiration, 20 to the minute. The face had an anxious expression. The tongue was coated in the middle. There was no palpable enlargement of the glands of the neck or axillæ, but in the right groin several slightly enlarged glands could be distinctly felt, and the patient, though his mind was partially clouded, winced decidedly when either groin was palpated. It was evident that the glands were quite tender. In the absence of urethral discharge, chancre, or evidence of local irritation in the lower extremities, the case was, on account of the local and general phenomena, regarded as one of plague. The skin was cleansed and a sterilized hypodermic needle introduced into the groin. A few drops of bloody fluid were withdrawn, presumably from one of the enlarged glands. It was difficult to be sure of this, however, as the patient could not be kept quiet while the needle was being inserted. No colonies of plague bacilli developed in the inoculated tube. The necropsy subsequently made indicated that the needle had failed to enter an enlarged gland.

The patient was seen on the following day, when his condition showed no change for the better. The pulse was 136 and feebler, the patient seemed in general weaker, and an unfavorable prognosis was made. The patient's friends were told that an injection of Yersin's serum offered the best chances for recovery, though they were also told that not much could be hoped from any treatment in the stage of the disease in which patient then was. The offer was refused. The man died on February 10, the next day.

The dead body was inspected on the morning of February 11. The body was in a state of firm rigor mortis, the limbs being strongly flexed. On breaking down the rigor mortis and palpating the glands in the groin it was difficult to say positively that there was any enlargement of the lymphatic glands. In view of the enlargement distinctly made out during life and the clinical picture which had been observed, the death was believed to be one due to plague and a pathological and bacteriological examination undertaken. The results indicated clearly the existence of infection with *B. pestis* (*vide infra*—laboratory case 6).

Death 8 (inspected February 11).—Chung Moon Woo She, wife of Chung Toy Ding, living in a cellar at 27½ Waverly place. She had been seen clinically by inspecting commissioner on February 6 and also on February 9. When first seen clinically, it was learned that she had been ill for three or four days, complaining of aching pains in ribs and other bones, headache, and loss of appetite. She had no cough. Two days before she had felt very chilly. On examination she was found to have slight fever; pulse, 100; tongue slightly coated; examination of thorax and abdomen negative; careful palpation of cervical, axillary, cubital, inguino-femoral, and popliteal lymph glands revealed no enlargement or tenderness. When seen on February 9 the patient was found to have grown much worse. The pulse was 132 and quick; the temperature was higher; the tongue was dry; sordes were appearing upon the lips, and the woman was semistupid and moaning in bed. The next day, February 10, the patient died, and the body was inspected on the following morning. The house in which the body lay was filled with men, women, and children, friends of the deceased, all of whom objected strenuously to any examination of the body whatever. It was insisted upon, however, and finally, by promising that only one small cut would be made, permission for examination was granted. Amid an appalling outbreak of grief on the part of the friends, an incision was made in one groin, and as the glands embedded in the fat there showed no hemorrhage or enlargement no further examination was made. It is to be regretted in this case, where only one slight incision was allowable, that the spleen was not bacteriologically examined, as the case may have been one of general infection with *B. pestis*. At the time, however, in face of the strong protest made by the friends, it seemed wise, in order not to antagonize the Chinese too much, and so perhaps interfere with the progress of the whole investigation, not to go further. The body was surrounded by quicklime and sublimate sheet, and burial was permitted by the board of health.

Death 9 (inspected February 12).—Foong Ah Fong, female; age, 12; found dead at 747 Sacramento street (room No. 12), fourth floor. This little girl had been observed clinically on February 6, the first day of systematic clinical inspection. She gave a history of having caught a cold, followed by a headache and lack of appetite. She had complained of no chill or vomiting. Her pulse was 84 and her temperature only slightly above normal. She did not look very ill. The tongue was slightly coated. There was no palpable enlargement of lymphatic glands. As the splenic dullness was only slightly increased, and the mother of the child stated that the patient had been ill for fully two weeks, plague was not suspected. The case was looked upon as possibly a mild case of typhoid, and instructions were given to report to the Six Companies in case she got worse. She was not visited again during life. It was a surprise to hear of her death, and on inspecting the body, though no external signs of plague were visible, it was deemed advisable to make at least a bacteriological examination of the spleen. This was done, but under marked protest from the child's relatives. The result showed that the child was actually infected with *B. pestis* (*vide infra*—laboratory case 7).

Death 10 (inspected February 12).—Ung Ah Buck; age, 45; found dead at Wing Hai's undertaking establishment, on Sacramento street. This man had been seen alive and examined by Dr. Barker on the previous day, who diagnosed the case, *intra vitam*, as one of cervical bubonic plague. When seen alive he was in a room upstairs in the rear of 921½ Dupont street, opposite St. Louis alley. The man was sitting up, but looked extremely ill. His face was pale, cyanotic, and anxious looking. His voice was very feeble, but his intelligence seemed almost unclouded, and he was able to carry on a conversation, though with difficulty, with the interpreter. The friends stated that he had at times wandered in his talk. He was under the care of Dr. Mather. The patient stated that he had been ill for two weeks. His neck had been swollen for one week, and he regarded the condition as quinsy. With the aid of a tongue depressor the throat was examined. The fauces were swollen and reddened, the swelling being very marked in the left side. The left palatine tonsil was much enlarged and showed on its surface a grayish-white patch the size of a dime. The reddening in the throat was general, and there was less local injection than one ordinarily sees in diphtheria. The left side of the neck was brownish yellow, having been painted over with a solution of iodine. On inspection and palpation marked bulging was found. This seemed to be due to enlargement of the cervical lymphatic glands. The case was diagnosed as one of plague, with cervical bubo. The man died next day, and a complete autopsy was made by Dr. Flexner. The pathological examination showed typical lesions of plague, and the bacteriological examination made by Dr. Novy demonstrated the presence of *B. pestis* (*vide infra*—laboratory case 8).

Death 11 (inspected February 14).—Baby, 7 days old, found in undertaker's establishment on Clay street, having died at 717 Sacramento street. Advised making of cover slip and cultures from umbilical stump and from spleen; reported negative as regards *B. pestis*.

Death 12 (inspected February 15).—Ow Ah Lane; male; age, 55; cooly, who had worked at San Jose Junction, died at Kwang Chow "hospital" February 14, at 6 a. m. He had been ill for from six to seven months. No enlargement of lymph glands. Advised bacteriological examination of spleen. Reported negative as regards *B. pestis*.

Death 13 (inspected February 16).—Male; body found at Quong Fook's undertaking establishment. Slight swelling in right groin. Pathological examination negative as regards plague. No bacteriological examination made.

It will be noticed that of the 13 deaths which came to our attention, occurring from February 5 to February 16, inclusive, 6 were undoubtedly due to infection with plague. A seventh (death No. 8) may have been a case of plague which went unrecognized. The six undoubted deaths from plague occurred during the eight days from February 5 to February 12, inclusive. During the days February 13 to February 16, inclusive, no new cases of plague or deaths therefrom were encountered.

Two of the deaths from plague occurred in the Chinese theater, on Washington street. The other four cases occurred singly in different parts of Chinatown. The accompanying map shows the location of 6 cases observed by your commissioners, and also of those which have previously been regarded as plague by the city board of health.

The study of cases during life and the inspection of bodies after death prove that it is often difficult and under certain circumstances impossible to make a diagnosis of plague, even post-mortem, without bacteriological examination. In outspoken bubonic cases there will be but little, if any, difficulty in diagnosis, either intra vitam or post mortem, provided the observer has had sufficient experience with the disease; but in the absence of primary buboes the unskilled observer will miss practically every case, and even the practitioner who has had much experience with plague may be deceived. Your commissioners feel sure, from experience with plague in Hongkong, India, and San Francisco, that once it is established that plague exists among the Asiatics of a town, every Asiatic who has fever should be suspected as a case of infection with plague until the disease is proven to be other than plague, and every dead body should be treated as a plague cadaver until bacteriological examination of glands, lungs, and spleen (including animal inoculation) has proven the absence from the body of the B. pestis. Only by such caution will it be possible to avoid missing actual plague cases.

In the following table are given the deaths per month occurring from all cases among the Chinese during the past four years, as recorded by the city board of health. As data regarding the exact population of Chinatown at different times are not obtainable, it is difficult to institute comparisons of the mortality among the Chinese with that among the whites. It is obvious, however, that at no time during the past four years has the mortality rate among the Chinese increased to such an extent as to in itself cause alarm.

Mortality among Chinese of San Francisco, 1897–1901.

Months.	1897.	1898.	1899.	1900.	1901.	Months.	1897.	1898.	1899.	1900.	1901.
January	37	35	46	64	45	August	35	47	43	19	......
February	46	36	39	48	......	September	45	27	35	27	......
March	38	46	37	47	......	October	36	53	44	32	......
April	35	41	33	30	......	November	39	66	37	34	......
May	27	34	36	42	......	December	23	46	48	32	......
June	30	21	46	25	......						
July	39	25	34	38	......	Total	430	477	478	438	45

The pathological anatomy of the cases of bubonic plague met with in San Francisco.

1. Human cases.
2. Experimental inoculations.

In the study of the pathology of the cases of plague met with among the Chinese in San Francisco, a number of disadvantageous circumstances were contended with. In the first place, owing to the peculiar prejudices of this people—prejudices born especially of their religious beliefs and practices—permission for post-mortem examination is given with great reluctance. The opposition to all mutilation of the bodies of the dead is so great that consent for necropsies was obtained only after assurances that the examinations would be limited strictly to the actual necessities for the establishment of the diagnosis of the disease.

In the next place, there is no public mortuary in San Francisco to which the dead bodies were or could be carried. Such examinations as were made were conducted in the narrow limits of a dimly lighted alcove in an undertaker's shop, or in the even worse habitations where the dead were found.

Under these circumstances the post-mortem examinations left something to be desired on the score of completeness, although in every instance the important question whether death was caused by plague was answered definitely.

The majority of the dead did not exhibit well-marked buboes. Careful palpation usually was required in order to discover swellings and œdema of the groin. In all cases in which inguinal buboes were suspected or discovered incision was performed and the diseased glands and periglandular tissue, if present, removed.

With one exception (case 8) complete necropsies were not made. In all cases, however, the spleen was exposed and examined and parts removed. The tissues removed at necropsy were examined in three different ways.

1. Cultures upon agar-agar and cover-slips were made at once after removal.
2. The tissues were taken to the laboratory, where additional cultures and cover-slips were prepared and examined.
3. Guinea pigs were inoculated with portions of the tissues.

Finally, portions of the tissue were placed in alcohol for future study.

HUMAN CASES.

Case 1.—Chom Ah Chou; necropsy February 5, 8 p. m. Examination was made in the presence of one of us (Flexner) by Dr. Kellogg. The examination consisted in exposing and removing the inguinal and femoral glands on both sides. Incisions were made deep into the subcutaneous tissue, extending from Poupart's ligament about one-third the length of the thigh. The tissues on the left side were swollen and œdematous; the œdema was sero-hemorrhagic in character, and the lymphatic glands were hemorrhagic and greatly swollen. On the right side the œdema was less marked, and the glands, while distinctly enlarged and reddened, were less altered than those of the left side. Sections of these glands showed them to be uniformly hemorrhagic and swollen and to contain frequently necroses visible to the naked eye.

The spleen was fully twice the normal size. It was softer than normal, the capsule was wrinkled, and the color deepened.

The further examination of these tissues was made after removal to the laboratory, and participated in by Drs. Barker and Novy. The examination consisted in—

(*a*) Study of cover-slips stained in anilin dyes and treated by Gram's method.

(*b*) Preparation of cultures upon agar-agar separately by each member of the commission.

(*c*) Inoculation of guinea pigs with portion of tissue from the glands and spleen.

(*d*) Preservation of tissues in alcohol for future study.

The examination of the cover-slips from the glands, periglandular tissue, and spleen showed large numbers of bacilli decolorizing by Gram's method and presenting the morphology of the B. pestis.

Case 2.—Lee Kee; necropsy February 5, 9 p. m., in the presence of Dr. Flexner, performed by Dr. Kellogg. No evidence of plague.

Case 3.—February 6, Lum Hong Yuen; autopsy made in Main Fook's undertaker shop; Drs. Kellogg, Novy, and Flexner present. Upon incision the right groin, from Poupart's ligament to the beginning of the middle third of the thigh, sero-hemorrhagic periglandular œdema and uniformly enlarged and reddened glands were found. The amount of fluid was considerable; although there was enlargement of all the glands, some of them reached to the size of a horse-chestnut. On section, these were of deep red color and soft consistence. Necroses were present.

The spleen was enlarged to fully double the normal size; it was softened and of a deep bluish-red color.

Cultures and cover-slips were made at once by Dr. Novy and the excised tissues taken at once to the laboratory, where additional cultures were made, cover-slips examined, and animals inoculated.

The cover-slips showed large numbers of bacilli having the morphology and staining properties of B. pestis.

Case 4.—February 6, Fong Sha Shong; necropsy by Dr. Kellogg, in the presence of Drs. Novy and Flexner. No evidence of plague.

Case 5.—Wong Chi Lui, February 7; necropsy by Dr. Barker, 6 p. m. Drs. Novy and Kellogg present.

On inspection, there was a swelling in the inguino-femoral region, which, on incision, revealed enlarged glands about the saphenous opening and in the groin. The largest gland had the size of an English walnut and was of a dark reddish-brown color; it was soft and juicy in consistence and mottled with hemorrhages and grayish-white patches of necrosis. The less swollen glands were markedly injected and contained hemorrhages. Periglandular tissue was very œdematous, the fluid running freely from the incision. The spleen was about twice the normal size, soft, and friable.

Cultures were made at once by Dr. Novy and cover-slips about one hour later at the laboratory, where at the same time animals were inoculated with portions of the tissue. The cover-slips from the spleen and the glands showed bacilli presenting all the properties of B. pestis.

Case 6.—February 10, Tom Shom; necropsy by Dr. Kellogg, Drs. Barker and Novy being present.

There was a slight swelling in the right inguino-femoral region which, on incision, revealed slightly œdematous subcutaneous tissue, with slight enlargement of the glands. The largest gland had the size of a filbert, and its surface was dark and hemorrhagic; on section, it presented distinct hemorrhages; other glands were swollen, soft, juicy, and hemorrhagic. The spleen was enlarged, soft, and friable. The examination of the groin showed that the hypodermic puncture made for the withdrawal of fluid for diagnostic purposes during life had failed to enter a lymph gland.

Cover-slips from the spleen and glands showed large numbers of bacilli having the characteristic properties of the B. pestis.

Case 7.—Foong Ah Fong, February 12; necropsy by Dr. Flexner, Dr. Barker present. The spleen only was examined; the organ was enlarged to about twice the normal size and was diminished in consistence. Cover-slips showed a very small number of bacilli of the size of B. pestis, although the characteristic polar staining was not observed. Cultures were made, and a portion of the spleen was introduced subcutaneously into a guinea pig.

Case 8.—Ung Ah Buck; autopsy February 12, at noon, at the undertaking shop of Wing Hai by Dr. Flexner, Drs. Novy, Barker, Kellogg, and Wilson being present. The left side of the face and neck presented a marked diffuse swelling, extending from the angle of the jaw backwards to the sterno-cleido-mastoid muscle and below, almost reaching the clavicle.

On incising this region the parotid gland was first reached; this organ presented a normal appearance. After dissecting away the parotid gland a group of greatly enlarged deep glands surrounding the carotid artery and jugular vein came into view. The periglandular tissue was infiltrated with bloody fluid and presented a sodden appearance. The enlarged glands and portions of the surrounding tissue were excised; the former were found to be swollen (several reaching the size of an English walnut) and to be wholly altered in appearance and consistence. In color they were deep purplish, and on incision a hemorrhagic fluid exuded. Opaque points of necrosis were also present.

The general subcutaneous fat was well developed; there was no general œdema. Peritoneum appeared smooth and glistening; there was no excess of fluid in abdominal cavity and the abdominal glands were not noticeably swollen. The spleen was enlarged to fully twice its normal size; it presented a purplish color and its consistence was diminished. The pleural cavities were dry. The lungs retracted moderately upon removal of the sternum. The lower lobes of the lungs were congested, but no consolidation was made out. No other abnormality was observed in the body.

The organs and tissues removed at this necropsy, consisting of the enlarged cervical glands and spleen, were taken to the laboratory, where cover-slips, cultures, and animal inoculations were made.

The cover-slips from the spleen showed large numbers of a bacillus having the morphology and staining properties of the B. pestis. The cover-slips from the glands differed in their appearance. In some instances there were present large numbers of bacilli similar to those in the spleen, together with a few diplococci or short chains of cocci. Other cover-slips showed, besides the organisms mentioned, a bacillus having the morphology of the B. diphtheriæ.

EXPERIMENTAL INOCULATIONS.

The animals used for experimental inoculations were half-grown and grown guinea pigs. In order to guard against accidental infection of the locality, the animals were placed in glass jars, which in turn were placed in large crocks, the latter having been covered with wire-netting covers, upon which the earthenware covers were placed. When an animal succumbed to the inoculation it was carefully removed from the jar and immersed for some time in 1–1000 sublimate solution. The jar itself was filled with a similar sublimate solution and the two left in contact for several days.

After subjecting the animals to necropsy they were placed in the steamer and thoroughly steamed, after which the body was incinerated. Such portions of the tissue as were preserved for microscopical study were placed at once in 95 per cent alcohol.

Inoculations were made subcutaneously with bits of tissue from the human cases and pure cultures of bacilli obtained from these sources. The usual procedure was to inoculate at least two animals from each human case; one with portions of the spleen and another with portions of the lymph glands. The cultures used were derived indifferently from the spleen and from the glands.

The inoculated animals can be separated into groups, depending upon the results of the inoculation. These results in turn depended upon the virulence of the material—tissue or culture—inoculated, upon which also depended the duration of life following inoculation.

It is important to state that characteristic lesions were obtained from inoculated material derived from every case in which bacilli were found in cover-slips, including case 7, in which very small numbers of bacilli were detected in the spleen.

Types of infection.—The animals inoculated early in the course of the investigations died at periods varying from forty hours to eight days. Those inoculated later, and one or two inoculated with cultures early in the studies, but which have not succumbed, were etherized at the close of the work and subjected to post-mortem examination. According to the period of survival and virulence of the inoculated material, the appearances observed denoted (*a*) bacteræmia without microscopical localization in the organs and (*b*) focal, nodular localizations in the internal organs. In all cases marked local lesions at the site of inoculation and in the adjoining tissues occurred.

Local lesion.—At the point of inoculation the tissues—skin, subcutaneous tissue, and sometimes muscles—were infiltrated with pus cells and presented a yellowish focus of necrosis. From this area as a center, the subcutaneous tissue, sometimes of one side, but frequently of both sides, was occupied by gelatinous hemorrhagic infiltration.

The lymphatic glands of the inguinal and axillary regions were distinctly enlarged even in the acute cases. In those animals which died after a longer period or were killed from six to seven days after inoculation the regional lymphatic glands were much enlarged, hemorrhagic, and even necrotic. The inguinal glands were, as a rule, more swollen than the axillary.

Cover-slip preparations from the local lesion—necrotic area, subcutaneous œdema, swollen lymph glands—showed large numbers of bacilli, having the characteristic morphology, staining, and reaction to Gram's method of the B. pestis. Cultures from these sources gave positive results.

In one animal in which the inoculation was made with a culture, the animal being etherized on the third day, there was slight local reaction only, no involvement of the regional lymph glands and no visible lesions in the internal organs having been observed. A small number of characteristic bacilli were found in cover-slips made from the site of inoculation.

The spleen and liver.—In the instances of rapid death (bacteræmia) the spleen was moderately large, its color was deepened, its consistence decreased, but no focal lesions were visible to the naked eye. Cover-slips and cultures showed numerous bacilli agreeing in characteristics with those of B. pestis.

In this class of cases the other organs failed to show focal lesions. The lungs appeared mottled only, and a few small necroses existed in the liver; numbers of bacilli were contained in all the viscera and in the heart's blood.

The focal lesions in the spleen consist of grayish-white nodules, larger than a millet seed in size, covering the surface (within the capsule) and occupying the substance of the organ; when the nodules are numerous, as, e. g., in animals succumbing from the sixth to the eighth day, or after etherization at that period, when there has been a marked local reaction, the spleen is greatly enlarged, perhaps five to six times its normal size, and its color is pale. Cover-slips and cultures show a very large number of characteristic bacilli if the animal has died spontaneously, while if killed the number of bacilli upon cover-slips and cultures is far less.

The liver invariably showed lesions when death had been delayed a few days. The common ones were focal necroses of varying size. These were yellow in color, and in size ranged from that of a pin's point to linear and wedge-shaped areas 3 to 4 millimeters in length. Only rarely did whitish nodules similar to but smaller than those occurring in the spleen occur. The best example of nodular lesions in the liver was observed in an animal inoculated with a culture derived from case No. 1, the guinea pig having been etherized on the eighth day after inoculation.

The lungs.—The lungs presented a variety of appearances, only one of which was characteristic. Sometimes they showed no microscopical lesion; not uncommonly they were mottled and presented small ecchymoses beneath the pleura; rarely they contained scattered whitish nodules resembling those of the spleen, except that they were smaller and surrounded with a zone of recent hemorrhage. No effusions into the pleuræ were noted.

Subserous hemorrhages.—These were common, especially in the peritoneum, where they occurred beneath and within the serosa of the large intestine, and in the pleura covering the lungs. They were usually small in size, although, at times through confluence, they reached larger dimensions. They did not give rise to an exudate or effusion into the serous cavities.

The other organs, except the adrenal glands, showed no especial changes to the naked eye. The adrenals were uniformly congested and often very dark in color and hemorrhagic.

The central nervous system was not examined.

BACTERIOLOGICAL EXAMINATIONS.

Case 1.—Chun Ah Chou, 814 Washington street; necropsy February 5. The spleen and left femoral glands were examined. These organs were found to contain enormous numbers of bacilli, having the morphological and tinctorial properties of bacillus pestis; thus, the short, thick, oval rods gave a bipolar stain with Loeffler's methylene blue or with carbolic thionin and were decolorized by Gram's method. Their pathogenicity was determined by inoculation of portions of the spleen and of a pure culture, subcutaneously, into guinea pigs.

Agar streaks made from the perfectly fresh organs showed many small, white, moist, isolated colonies, having all the appearance of those of bacillus pestis. This was further confirmed by microscopic examination of living and stained preparations of such cultures. A few rapid-growing colonies due to other forms of bacteria were present. Subcultures were made in glucose, gelatin, bouillon, agar, salt agar, and milk. On agar in Petri dishes in twenty-four to forty-eight hours in the incubator, small, white or grayish, moist colonies developed. These had finely granular center, with a smooth, sharply defined border.

The stab culture in glucose gelatin developed a slight growth along line of inoculation. On the surface the growth spread slightly, was grayish, moist in appearance, and had a slightly wavy, raised border. No gas was formed.

In bouillon in twenty-four hours a diffuse cloudiness was produced. The sediment was very slight, scarcely appreciable. Subsequently a faint stringy deposit formed. The surface remained perfectly clear, with a trace of a ring or collarette.

The streak cultures on nutrient agar presented a moderate grayish-white moist growth, which, when touched with a platinum wire, could be drawn out into strings.

On 5 per cent salt agar the growth is very slight, scarcely visible, and shows the peculiar roundish or pyriform involution forms of the pest bacillus.

In milk the organism grows without producing any visible change in the medium.

The absence of gas production and of coagulation of milk, together with the macroscopic and microscopic characteristics, agreed fully with the characters of bacillus pestis. The effects on animals have been described in a preceding part of the report.

Guinea pig No. 1.—Was inoculated under the skin with a portion of the spleen from the above case. It died in thirty-six to forty hours. Cultures on agar made from the spleen and heart blood gave almost pure growths of the pest bacillus. Direct examination of the organs showed enormous numbers of typical plague bacilli.

Guinea pig No. 2.—Was inoculated subcutaneously with a pure culture obtained from the gland of above case. The animal died in three days. Plague bacilli were very numerous in the spleen and inguinal glands, and were also present in the heart's blood.

Case 3.—Lum Hong Huen, 28 Ross alley; necropsy February 6. Smear preparations from the spleen showed large numbers of short, thick rods, chiefly single; some oval or roundish forms were also present. The organisms stained readily with Loeffler's methylene blue or with carbolic thionin. In the latter case the bipolar staining was excellent. The organisms were completely decolorized by Gram. Cover-glass preparations from the gland likewise showed very numerous bacilli, occurring singly, taking the bipolar stain, but not that of Gram. Agar cultures were made at the time of the necropsy in the undertaker's shop of Main Fook. The cultural and morphological characteristics were the same as those observed in case 1.

Guinea pig No. 3.—Received subcutaneously a portion of the spleen from above case; died in five and one-half days. On autopsy the spleen was found markedly enlarged, full of white nodules, which were also present in the liver and in the lungs. Cover-glass preparations from the spleen showed enormous numbers of bacilli having all the characteristics of bacillus pestis. Agar slants were inoculated with the heart's blood and spleen of this animal. The former yielded a slightly contaminated growth, but the culture from the latter was pure.

Case 5.—Wong Chi Lui, 21½ Waverly place; autopsy February 7. Streak preparations from the spleen showed very numerous pest bacilli apparently in pure culture. The predominating form was the short, thick rod, although some oval or roundish forms were present. Loeffler's methylene blue and carbolic thionin stained the bacilli readily, demonstrating the characteristic bipolar form. The organisms were completely decolorized by Gram. Similar preparations made from one of the left femoral glands show fewer organisms, but these in form, size, and staining reactions are identical with those found in the spleen. Cultures made on agar developed very slowly; on subsequent transplantation, however, the growth was more rapid, more abundant, and typical of that of bacillus pestis.

Guinea pig No. 4.—Was inoculated subcutaneously with a portion of the gland from the above case. Death resulted in three and one-half days. Bacilli were numerous in the spleen and corresponded in characteristics to those of the plague bacilli.

Guinea pig No. 5.—Was inoculated subcutaneously with a portion of the spleen; it was found dead three and one-half days later. Numerous plague bacilli were found in the spleen, heart's blood, and glands. Agar streaks from the heart's blood gave numerous small colonies of pest bacilli with a few larger colonies due to foreign organisms. The spleen gave numerous isolated small moist colonies, apparently a perfectly pure culture of the plague bacillus. Agar streak plates were made at the same time, and gave in twenty-four hours numerous minute colonies.

Guinea pig No. 6.—A portion of the spleen from this case was introduced into the peritoneal cavity. Death resulted in four and one-half days. Pest bacilli were abundant in the internal organs and in the glands. Agar streaks from the heart's blood gave a very limited growth, while that from the spleen was scarcely visible. In this and several other instances difficulty was experienced in starting the growth of the organism directly from the tissues. Once started, however, with subsequent transplantations better results were obtained.

Guinea pig No. 7.—Was inoculated subcutaneously with a loopful of a pure culture obtained from guinea pig No. 5. It died in two and one-half days. Necropsy revealed a hemorrhagic œdema, and cover-glass preparations of this showed pest bacilli mixed with numerous minute diplococci and streptococci. The spleen was large and soft, contained nodules, and on staining cover slips therefrom enormous numbers of typical plague bacilli, apparently perfectly pure, were found. No diplococci were present.

Case 6.—Tom Shom, 814 Washington street; necropsy February 11. During life some fluid was aspirated by means of a sterile syringe from the swelling in the right femoral region and transferred to nutrient agar. Blood was also drawn from the lobe of the ear and planted on agar. Stained preparations made from these specimens failed to demonstrate the presence of any organism. Cultures developed pyrogenic cocci, but failed to give any indication of pest bacilli. On necropsy the femoral glands, though characteristic of plague, were found not markedly enlarged. It was evident that the aspirating needle when introduced had missed the gland proper, and the failure to isolate the pest bacillus during life in this can thus be explained. It should be noted that the periglandular tissue was but very slightly involved. Streak preparations made from the hemorrhagic gland showed relatively few typical plague bacilli. A long, thick bacillus was present in small numbers. Gram's stain was negative. Streak preparations from the spleen showed the pest bacillus to be present in large numbers and apparently pure. The organisms occurred singly, gave the bipolar stain, and were decolorized by Gram.

Guinea pig No. 8.—Was inoculated subcutaneously with a portion of the spleen from this case. Six and a half days later, though healthy in appearance, it was killed. A circumscribed caseus local lesion was found. There was a slight glandular enlargement on the same side. The spleen was slightly enlarged and showed white nodules. Pest bacilli having the short-rod and oval form were present in small numbers.

Case 7.—Fong Ah Fong, 747 Sacramento street; necropsy February 12. Streak preparations from the spleen revealed the presence of pest bacilli, although these were not very abundant; indeed, they were difficult to find in cover slips. Typical bipolar staining rods and oval roundish forms were, however, found. Gram's stain was negative.

Streak cultures were made with the fresh spleen on agar slants, and at the same time agar plates were made. The agar streaks failed to give an appreciable growth, but on the plate a colony was found which corresponded to that of the plague bacillus. On microscopic examination it was observed to consist of small, short, oval, nonmotile rods, which decolorized by Gram. The colony transplanted to agar gave a typical growth of pest bacilli, and this culture was used to inoculate guinea pig No. 10.

Guinea pig No. 9.—Received a portion of the spleen of Fong Ah Fong subcutaneously. It died in four and one-half days. The spleen contained enormous numbers of pest bacilli, which stained in the usual bipolar manner, and were decolorized by Gram. The heart's blood likewise contained the organism. Cultures were made on agar from the spleen and heart's blood of this animal. Both gave numerous small, moist colonies of bacillus pestis.

Guinea pig No. 10.—Was inoculated subcutaneously with the agar culture mentioned above. It was killed two and one-half days later. The spleen showed only a few but characteristic pest bacilli. Under the skin there was but slight local change, and a few typical bacilli were found.

Case 8.—Ung Ah Buck, St. Louis alley; necropsy February 12. Cover-slip preparations from the cervical lymph glands showed the presence of several distinct organisms. The short, thick, oval forms of the pest bacillus were present in small numbers. With them was associated a large, thick bacillus. There were also bacilli present resembling the bacillus diphtheriæ and a diplococcus closely resembling that of Fraenkel. The pest bacilli gave the usual bipolar stain with methylene blue and with carbolic thionin. Specimens stained by Gram's method showed deeply stained diplococci, the other forms being decolorized. Smear preparations from the spleen showed many organisms resembling the bacillus pestis morphologically.

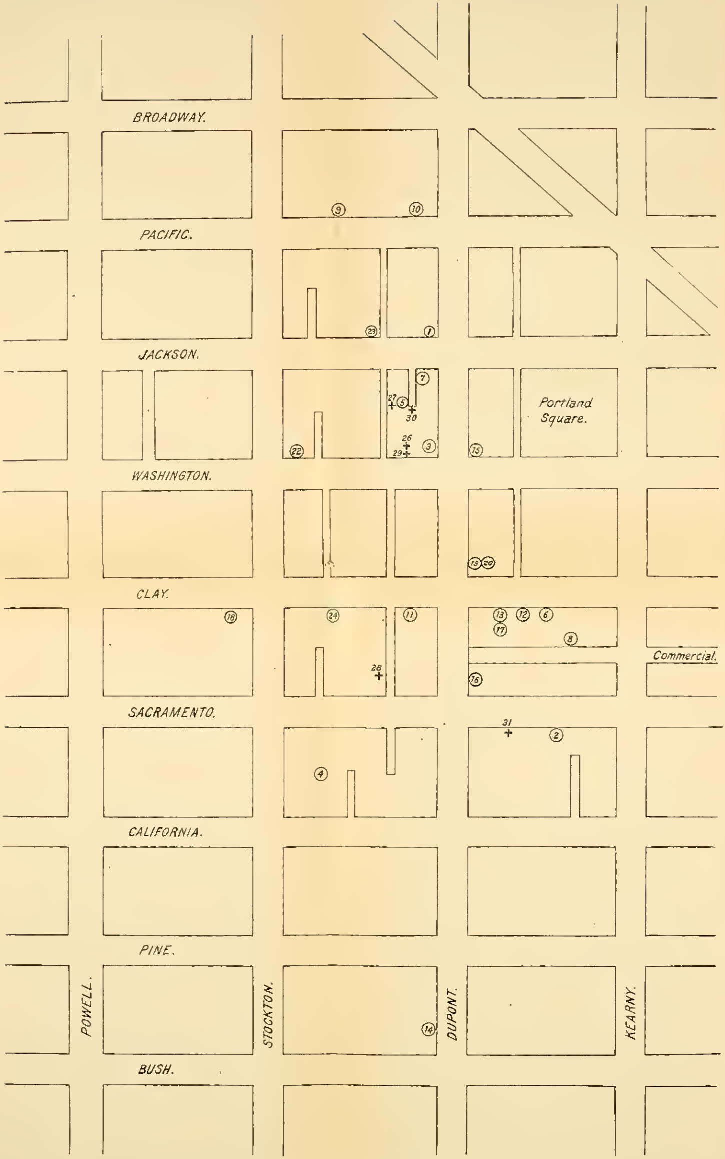
Agar streaks from the fresh spleen gave a number of discrete moist colonies, which consisted of large, oval, nonmotile bacilli, occurring singly and only occasionally in pairs. The streak cultures from the cervical gland also gave numerous isolated colonies. In both cases the cultures obtained were apparently perfectly pure, and agreed in every respect with those of plague bacilli. The other bacteria seen in cover slips did not grow. Agar plates yielded the same results.

Guinea pig No. 11.—Was inoculated subcutaneously with a small portion of the spleen from above case. In about three days the animal was very sick, and was finally killed five and one-half days after inoculation. Bacillus pestis was found in the spleen, and to a less extent in the blood.

The bacteriological examination of the foregoing six cases has, therefore, demonstrated the presence of the bacillus pestis in each.

SIMON FLEXNER.
F. G. NOVY.
LEWELLYS F. BARKER.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.



MAP OF "CHINATOWN," SAN FRANCISCO.

CIRCLES—Cases seen and regarded as plague by City Board of Health before arrival of Commission.

CROSSES—Cases of plague observed by your Commission from February 5 to February 12, 1901.

[Inclosure,]

No.	Name.	Age.	Sex.	Color.	Place of death.	Date of death, 1900.
1	Wing Chut King	41	Male	Mongolian	1001 Dupont	March 6.
2	Chu Gan	22	do	do	723 Sacramento	March 15.
3	Ng Ach Ging	37	do	do	905 Dupont	March 17.
4	Lee Sun King	47	do	do	Oneida place	March 18.
5	Law An	38	do	do	St. Louis alley	April 24.
6	Lim Fa Muey	16	Female	do	739 Clay street	May 11.
7	Chu Sam	38	Male	do	717 Jackson	Do.
8	Chin Moon	16	Female	do	730½ Commercial	May 13.
9	Her Woon Jock	53	Male	do	740 Pacific	May 14.
10	Dang Hong	40	do	do	706 Pacific	May 29.
11	Chen Kney Kim	49	do	do	819 Clay	June 2.
12	Jay Man Tong	60	do	do	759 Clay	June 9.
13	Lee Wing Tong	40	do	do	767 Clay	July 6.
14	William Murphy	34	do	White	427 Dupont	August 11.
15	Ham Tan	29	do	Mongolian	900 Dupont	August 15.
16	Lea Do Hen	50	do	do	710½ Dupont	October 5.
17	Chun Yen	37	do	do	767 Clay	October 10.
18	Taik Dong Leong	39	do	do	705 Clay	October 14.
19	Young Moon Li Chee	30	Female	do	802 Dupont	October 31.
20	Young Wah Noui	9	do	do	do	November 1.
21	Anne Roede	28	do	White	Pacific Hospital	November 3.
22	Lee Ho	30	Male	Mongolian	844 Washington	December 7.
						1901.
23	Chun Wey Lung	60	do	do	780 Jackson	January 6.
24	Leam Wing Low	59	do	do	633½ Clay	January 15.
25	Angela Colombo		do	White	5 Lafayette place	Do.
26	Chun Ah Chou[a]	44	do	Mongolian	814 Washington	February 5.
27	Lum Hong Yuen[a]	37	do	do	28 Ross alley	February 6.
28	Wong Chi Lin[a]	50	do	do	15½ Waverly	February 7.
29	Tom Shom[a]	51	do	do	814 Washington	February 10.
30	Ng Ah Back[a]	45	do	do	St. Louis alley	February 11.
31	Foong Ah Fong[a]	12	Female	do	747 Sacramento st	February 12.

[a] Observed by commission.

NOTE.—Particular places of death of following numbers were as indicated below: No. 8, Pacific Hospital, Stockton and Chestnut streets; No. 13, City and County Hospital; No. 14, City and County Hospital; No. 21, Children's Hospital, 3700 California street; No. 25, City and County Hospital.

AGREEMENT FOR COOPERATION WITH REPRESENTATIVES OF CALIFORNIA AND SAN FRANCISCO.

On March 9 a committee representing the governor of California, the mayor of San Francisco, and the commercial interests involved called upon the Secretary of the Treasury, and a conference being held between the gentlemen composing this committee and the Secretary and Assistant Secretary of the Treasury and the Surgeon-General of the Marine-Hospital Service an agreement was arrived at for thorough cooperation and the inauguration of measures looking to the cleansing of Chinatown and the eradication of plague infection in San Francisco, which agreement is embodied in the following letters:

[Letter.]

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL U. S. M. H. S.,
Washington, D. C., March 11, 1901.

SIR: I transmit herewith a letter, dated March 9, from the Surgeon-General of the U. S. Marine-Hospital Service, outlining the understanding which has been arrived at between yourselves and this Department as a result of the conference on March 9.

In transmitting the same I wish to express the appreciation of this Department of the visit of your committee and its spirit of friendly conference. I trust, also, that the result so earnestly desired by both yourselves and the Department will be speedily achieved, and by methods that may be effective without causing undue alarm.

The Department will appreciate an acknowledgment.

Respectfully,
O. L. SPAULDING,
Acting Secretary.

Hon. JOHN P. YOUNG,
Chairman Committee Representing the Governor, Mayor of San Francisco, and Business Interests of California, Washington, D. C.

[Inclosure.]

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON M. H. S.,
Washington, March 9, 1901.

SIR: Referring to the conference, held in accordance with your instructions after the meeting in your office this forenoon, with the representatives of the governor of California, the mayor of San Francisco, the press, the railroads, and the business interests of San Francisco, I have to inform you that an understanding has been reached, stated somewhat informally as follows:

The visiting representatives have expressed a desire for hearty cooperation of the State and city authorities interested in the work, which is made necessary in view of the report of the commission; and they desire, while this work shall be done by the city and State authorities, the services of some expert officer of the Service to give advice as to the methods to be pursued, agreeing that his recommendations shall be carried out, and that the work shall be begun at once.

I have informed them also that so far as can be seen at the present time the principles enunciated in my telegram of January 9, 1901, to Surgeon White, copy of which is inclosed, are about what should be adopted at the present time, with the understanding that it is possible that future developments may require more radical measures, though it is not expected.

It is understood also that the burden of expense falls upon the local or State authorities, though, of course, the Department will meet the salaries and incidental expenditures of its own officers.

It is the desire of the Treasury Department, as well as of the Bureau, that these affairs shall be conducted with the least possible interruption to commerce and the least possible excitation of alarm.

Surgeon White, now in San Francisco, is the officer of the Service who will be the representative of the Bureau and of the Department in this matter, and who, it is understood, is entirely acceptable to all parties.

Respectfully,
WALTER WYMAN,
Supervising Surgeon-General M. H. S.

The SECRETARY OF THE TREASURY.

[Inclosure.]

WASHINGTON, D. C., *January 9, 1901.*

SIR: Regarding plague in San Francisco you might say situation not acute. Experience Oporto, Santos, and Glasgow, and climatic conditions in San Francisco make it more a matter of future menace as instanced in British Journal December 1, page 1614. Present in Calcutta two years before acknowledged. Therefore, more to prevent future catastrophe than from present alarm, measures should be taken as necessity arises. Nor need they be in such manner as to excite alarm, but should include inspection, isolation, and disinfection, just as in smallpox. Assured of this, publication would be unnecessary. Use this as your judgment dictates.

Respectfully,
WYMAN.

Dr. J. H. WHITE, *Occidental Hotel, San Francisco, Cal.*

[Letter.]

WASHINGTON, D. C., *March 11, 1901.*

DEAR SIR: The commissioners appointed by the governor of the State of California, and the mayor of the city and county of San Francisco, to confer with the authorities of the United States at Washington, D. C., concerning the health conditions of California, have the honor to acknowledge the receipt of your letter of this date inclosing letter dated March 9, 1901, from Surgeon-General Wyman to yourself, and telegram dated January 9, 1901, from Surgeon-General Wyman to Dr. J. H. White.

In the above-mentioned letter and telegram of Surgeon-General Wyman it is in substance recommended that measures should be taken to secure the inspection and isolation of all supposed cases of plague in San Francisco and the disinfection of all infected premises therein, such measures being deemed entirely adequate, in view of present conditions, to prevent the spread of plague and to eradicate the same.

While the existence of plague in San Francisco has been denied, yet in view of the reasonable recommendations of Surgeon-General Wyman, indorsed by yourself, and in order that the public health may be protected against any possible danger and that all questions as to the existence of plague in San Francisco may be put at rest by the adoption and enforcement of adequate measures for its extermination, the commissioners are pleased, in behalf of the State of California and of the city and county of San Francisco, to accept said recommendations and to agree that the same shall be promptly and efficiently carried out by the health officers of the State of California or of the city and county of San Francisco, and are further pleased to accept, in the execution of said recommendations, the advice and cooperation of Dr. J. H. White, whose services in that behalf are kindly tendered by the United States Government.

The commissioners have the honor to express to you their most sincere appreciation of the exceptionally kind and courteous consideration received by them at your hands.

Very respectfully,

John P. Young.
Freemont Older.
Wm. F. Herrin.
H. T. Scott.
T. T. Williams.

Hon. Lyman Gage,
Secretary of the Treasury, Washington, D. C.

[Telegrams.]

Washington, *March 11, 1901.*

Surgeon Kinyoun, *Angel Island, Cal.:*

You are informed that commissioners, after conferences, leave to-night on return. The conferences have been harmonious, without personal or other accusations being made, and cooperation of all concerned is assured. Public exigency requires personal feelings and any desire on part of Bureau or any others for public verification of statements made or position taken must be subordinated to maintain the present attitude of nonpublication, even though outsiders may have published some facts not obtained through the Bureau. The Department and the Bureau and its officers will maintain this attitude until further orders.

Wyman.

Washington, *March 11, 1901.*

Surgeon White, *San Francisco, Cal.:*

Arrangements perfected and cordial cooperation assured all around. Commissioners return to-night and you will be informed in detail both by them and by letters mailed to-night. Department and Bureau consider it necessary to maintain present attitude of reticence as regards publication.

Wyman.

RESULTS OF COMMISSION'S INVESTIGATION COMMUNICATED TO HEALTH OFFICERS AND OTHERS.

As soon as possible after the receipt of the report of the commission copies were mailed to the governor of California and to the mayor of San Francisco, and special letters were written from the Bureau to a number of State health authorities giving the results of the commission's labors. A list of the cases discovered by the commission, and identified as plague, was published in Public Health Reports of March 22, 1901, and in the following week a synopsis of their findings was prepared and published, and the full report was published in the Public Health Reports of April 19. Later their report was published in pamphlet form and distributed throughout the country.

The following letters conveyed the report to the governor of California and mayor of San Francisco:

[Letters.]

TREASURY DEPARTMENT,
Washington, March 14, 1901.

SIR: Referring to my telegram of January 30, stating that the results of the findings of the Treasury commission would be made known to you, I am informed by the Surgeon-General of the Marine-Hospital Service that the main facts as found by the commission were reported to you verbally under instructions from himself on February 20.

In addition to this verbal information, however, I desire to transmit to you herewith a complete copy of the report signed by Drs. Flexner, Novy, and Barker, composing the commission, and in transmitting the same I wish to express my gratification at the result of the conferences held on March 9 by this Department with your representatives, who will doubtless place in your hands the correspondence between themselves and this Department, showing the arrival at a mutual agreement.

Respectfully,

O. L. SPAULDING, *Acting Secretary.*

Hon. HENRY T. GAGE,
Governor of California, Sacramento, Cal.

TREASURY DEPARTMENT,
Washington, March 14, 1901.

SIR: Although, in accordance with instructions from the Surgeon-General of the Marine-Hospital Service, the Treasury commission, consisting of Drs. Flexner, Novy, and Barker, has reported to you verbally the results of its investigations at San Francisco, I desire to transmit to you herewith a copy of the full report of this commission.

Respectfully,

O. L. SPAULDING,
Acting Secretary.

The MAYOR OF SAN FRANCISCO, CAL.

The following letter was sent to State health authorities and others interested, in the United States:

[Letter.]

(CONFIDENTIAL.) TREASURY DEPARTMENT, MARINE-HOSPITAL SERVICE,
Washington, D. C., March 15, 1901.

DEAR DOCTOR: In accordance with custom in the editing of the Public Health Reports, on the 1st of January, new tables are published, and, accordingly, in the first week's issue for this year no special mention of plague was made, though the plague was duly reported in previous issues, and in the Public Health Reports for December 28, 1900 (see table), 22 deaths are reported as having occurred in San Francisco between March 7 and December 7, 1900. Subsequent developments have in no wise thrown any doubt upon the nature of these cases, but have been confirmatory.

Since January there have been officially reported 9 cases (all fatal) in Chinatown, San Francisco, on the following dates: January 6, 1 case; January 15, 2 cases; February 5, 1 case; February 6, 1 case; February 7, 1 case; February 10, 1 case; February 11, 1 case; February 12, 1 case. An additional case has also been reported as occurring during the week ended March 2, 1901, making 10 cases (and deaths) in all.

The Bureau and Treasury Department are endeavoring to bring about harmonious action between the State and city boards of health, and the mayor of San Francisco and governor of California. The governor of California in his message to the legislature January 8, 1901, denied absolutely the existence of plague in California, and finally sent a commission of five citizens to Washington to confer concerning the matter. These gentlemen represented the governor, the mayor, the press, the transportation and business interests. They have returned with the understanding that harmonious action will at once be taken for the suppression of the disease in Chinatown, San Francisco, under the advice of Surgeon White, Marine-Hospital Service, who is now on the ground; and to secure this harmonious action and its continuance I have felt convinced of the necessity of not giving out for publication all the facts in the case.

I inclose a marked copy of an address which I delivered last May, entitled "Suppression of Epidemics," which will show the principles that have guided me in this matter. By avoiding unnecessary publicity I feel that the actual necessary work has been and will be made possible and expedited.

There is nothing in the understanding arrived at which will prevent my freely giving the facts when it seems necessary to do so.

This is the situation at the present time. The Bureau published the facts freely for several months and met opposition and inaction. By showing consideration, as before mentioned, it is expected the work will be immediately taken in hand and pushed with vigor, which is the result to be desired. For the present, therefore, I have to request that while you have the information which I have you will not give it publication. I am sure that the work of inspection, isolation, and disinfection will be immediately taken up and vigorously carried on, but in view of the climatic conditions in San Francisco and the character of the disease, it will be the effort of all concerned to do this work thoroughly without undue publicity or exciting unnecessary alarm.

In this connection I desire to invite your attention to Public Health Reports issued to-day, containing (on p. 539) a study of the epidemic of plague at Beirut in 1900, by Mr. H. de Brun, and to the closing paragraphs of his article showing the distinction to be drawn with regard to danger and measures to be taken between the pneumonic and bubonic forms of the disease. So far as known at the present time, the disease in San Francisco is of the bubonic form.

Respectfully,

WALTER WYMAN,
Surgeon-General M. H. S.

[Inclosure.]

SUPPRESSION OF EPIDEMICS.

[Address delivered at the meeting of the Social Science Association, Washington, D. C., May 8, 1900, by Walter Wyman, Surgeon-General U. S. Marine-Hospital Service.]

An epidemic is like a conflagration—it is most easily suppressed at the beginning. Therefore the necessity of the earliest possible knowledge of its existence is obvious. The concealment of the first case in the hope that it will not spread is an ostrich-like policy, which an enlightened public sentiment should vigorously condemn. Even doubtful cases should be made known to the proper authorities and the same restrictions thrown about them as though they were known cases until the doubt is removed.

* * * * * * *

Now, in attempting a cure of this evil, it is necessary that, while denouncing concealment, we denounce also unnecessary startling and alarming announcements through the public press. It will be noted that I have urged that the information be given to the "proper authorities." It is for the health authorities to determine when in the interest of all it becomes necessary to give a public notification of the presence of an epidemic disease, and I believe that it is within the power of accredited health officers to regulate this matter.

* * * * * * *

The following letter was sent to Dr. F. Montizambert, director-general of public health, Ottawa, Canada; medical officer in command, Victoria quarantine station, Victoria, British Columbia; Dr. E. Liceaga, president superior board of health, Mexico, Mexico; Dr. Stuart Eldridge, Marine-Hospital Service, Yokohama, Japan; Dr. John W. Kerr, Marine-Hospital Service, Hongkong, China:

[Letter.]

TREASURY DEPARTMENT, MARINE-HOSPITAL SERVICE,
Washington, March 18, 1901.

DEAR DOCTOR: In accordance with custom, in the editing of the Public Health Reports, on the 1st of January new tables are published, and accordingly in the first week's issue for this year no special mention of plague was made, though the plague was duly reported in previous issues and in the Public Health Reports for December 28, 1900 (see table), 22 deaths are reported as having occurred in San Francisco between March 7 and December 7, 1900. Subsequent developments have in no wise thrown any doubt upon the nature of these cases, but have been confirmatory.

Since January 1, 1901, there have been officially reported 9 cases (all fatal) in Chinatown, San Francisco, on the following dates: January 6, 1 case; January 15, 2 cases; February 5, 1 case; February 6, 1 case; February 7, 1 case; February 10, 1 case; February 11, 1 case; February 12, 1 case. An additional case has also been reported as occurring during the week ended March 2, 1901, making 10 cases (and deaths) in all.

A thorough understanding has been arrived at between the State of California and city of San Francisco and the Treasury Department, by which the necessary work of inspection, isolation, and disinfection will be immediately pushed under the supervision of an officer of the Marine-Hospital Service who is now on the ground.

In this connection I desire to invite your attention to Public Health Reports issued March 15, containing (on p. 539) a study of the epidemic of plague at Beirut in 1900 by Mr. H. De Brun, and to the closing paragraph of this article, showing the distinction to be drawn with regard to danger and measures to be taken between the pneumonic and bubonic forms of the disease. So far as known at the present time, the disease in San Francisco is of the bubonic form.

Having given you this information, and necessary preventive measures being now taken, I have to state that in the interest of the work now going on at San Francisco it is desirable that no publication be made at the present time of the facts which I have just given you.

Respectfully,

W. WYMAN,
Surgeon-General M. H. S.

CORRESPONDENCE,—Continued.

[Telegrams.]

SAN FRANCISCO, CAL., *March 20, 1901.*

Surgeon-General WYMAN, *Washington:*

No orders received. Have you sent them?

WHITE.

WASHINGTON, *March 20, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

See the mayor and also John P. Young, who was chairman of commission appointed by governor and mayor to confer with Washington authorities, and advise with them as representatives of State and city, and report what action is being taken. You are to act as adviser under the terms of the correspondence between the commission and the Department dated March 9 and 11, copies of which were mailed you. Please acknowledge their receipt. Immediate action was agreed to. You will assist in any manner possible, advise as to what should be done, and keep Bureau informed.

WYMAN.

SAN FRANCISCO, CAL., *March 20, 1901.*

Surgeon-General WYMAN, *Washington:*

Telegram received. Will see mayor, but defer seeing other party who has recently editorially made another attack. Clipping sent you. If you directly order it, will see him under protest. Correspondence received.

WHITE.

WASHINGTON, *March 21, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Under circumstances, use your own discretion about calling upon party mentioned in your telegram of 20. Wire date of clipping, and if possible outline nature of attack in editorial.

WYMAN.

Austin, Tex., *March 21, 1901.*

Walter Wyman,
Surgeon-General M. H. S., Washington, D. C.:

Your letter to Texas State health officer of the 15th instant has been submitted me. I have but little confidence in the California authorities, and unless I have a positive assurance from you that this State will be carefully protected by you from the disease I shall immediately order the most stringent quarantine regulations. Please answer, by wire, immediately, as I will take no risk.

Jos. D. Sayers, *Governor.*

Washington, *March 21, 1901.*

Surgeon White, *San Francisco, Cal.:*

Have just received following from governor of Texas: "Unless I have a positive assurance from you that this State will be carefully protected by you from the disease I shall immediately order the most stringent quarantine regulations. Please answer, by wire, immediately, as I will take no risk." Show this to mayor, and communicate it to the governor and to others in your discretion. Before I can answer the governor of Texas I must have assurance that active measures are being taken.

Wyman.

Washington, *March 21, 1901.*

His Excellency Joseph D. Sayers, *Governor, Austin, Tex.:*

The five delegates from California, recently in Washington, left a signed letter with the Secretary of the Treasury agreeing that adequate measures should be promptly and efficiently carried out by the health officers of the State of California or of the city and county of San Francisco. I have wired the Service representative in San Francisco, Surgeon White, for information as to carrying out this agreement and will answer your telegram further on receiving telegraphic reply to my inquiry.

Walter Wyman.

San Francisco, Cal., *March 21, 1901.*

Surgeon-General Wyman, *Washington:*

Your telegram of the 21st received. The governor says been waiting return of committee to take action. All not yet arrived. You will see editorial about me to-morrow and about the surgeon-general on Saturday. Can not outline intelligently, but read between the lines. As intended, such writings will seriously handicap and possibly destroy my usefulness. I am as anxious for good results as the Treasury Department can possibly desire, though not optimistic. Shall have a consultation with the governor and the mayor to-morrow morning and will advise you of result. Have conferred with both over telephone and find that this is the best that can be done at present. Both agree will arrange if can possibly do so to take such steps as are necessary. Will try for definite and immediate action to-morrow, but will take some days to organize. As plague is now present in Sacramento it ought to be looked after. Will tell the governor this matter will complicate giving the desired assurances to the governor of Texas. Advise you not to do it as to Orientals under any circumstances.

White.

[Letter.]

San Francisco Quarantine Station,
Angel Island, Cal., March 21, 1901.

Sir: I have the honor to refer to a statement made in a letter of March 15, which is that, "So far as known at the present time the disease in San Francisco is of the bubonic form."

I have to inform you that the first case of the pneumonic form of plague which came under my observation was the case of William Murphy (white), dead at the city and county hospital on August 11. Plague bacilli were found in all tissues and were in abundance in the mucus of the nose and mouth. This case was primarily of the septicæmic type, becoming pneumonic during the last stage of the disease.

The second case was that of a Chinese girl, dead on November 1 at 802 Dupont street. The mucus of the nose and mouth containing countless plague bacilli. The post-mortem examination showed a typical broncho-pneumonia, due to the plague bacillus. This case was referred to in my telegram of November 2, 1900. By reference to my letter under date of December 6 (inadvertently dated November 6) it will be seen that on September 10 a Chinese school teacher died in these premises, in fact in these apartments. Dr. Wilson, the "assistant city physician," gave a death certificate of lobar pneumonia. The clinical history of this case was one of inflammation of the lung; the symptoms were pain in the chest, rapid breathing, cough, and bloody sputum. The illness only lasted a few days. Dr. Wilson believed that it was a case of pneumonic plague, in view of the two cases occurring simultaneously, in the same apartment, and soon after opening up and using the room formerly occupied by the Chinese school teacher.

Another case, which undoubtedly was one of plague of the air passages, was that of Samuel Fluth, a young man of 19, who became ill with sore throat accompanied with high fever and prostration. A homeopathic physician treated the case for nearly a week for typhoid fever, the case becoming all the time worse. A physician was called who diagnosed the malady to be malignant diphtheria. Antitoxin was administered and a trained nurse from the Pacific Hospital placed in charge of the case. A few hours before death, while delirious, the patient coughed and spat in the nurse's face. Two and a half days after, this nurse sickened, and died three days later in the Children's Hospital, despite the fact that an immunizing dose of diphtheria antitoxin was given. The post-mortem examination showed the cause of death to be plague. The infection of the nurse can be traced directly to that of the supposed case of diphtheria.

I still maintain that the number of cases of plague (32) does not represent all the cases occurring in San Francisco during the past year, the true number being, in my opinion, at least double. The bubonic cases have been detected, but the septicæmic and pneumonic cases have in most part been overlooked, the causes of death being ascribed to other diseases.

The reasons for this conclusion are given in my letter of December 6. From my observations made on the cases of plague occurring during the past year I am unable so far to definitely fix the time or determine the conditions when a case of pestis minor becomes pestis major (gravis) or, in other words, when the bubonic type may become pneumonic.

If the Bureau is in possession of any facts or recent literature on this all-important subject, I would respectfully request that it be furnished me for my information and guidance. The advantages here for obtaining this information from the current medical literature are extremely limited, necessitating one to rely on such clinical data as may be offered here.

Respectfully,

J. J. Kinyoun,
Surgeon, M. H. S.

The Surgeon-General Marine-Hospital Service.

[Telegrams.]

Austin, Tex., *March 22, 1901.*

Dr. Walter Wyman,
Surgeon-General M. H. S., Washington, D. C.:

Thanks for your telegram of yesterday. I am exceedingly anxious to work in connection with yourself. Failure to publish report of commission has excited great apprehension and causes suspicion that conditions are very bad in San Francisco and elsewhere in California. Please keep me posted by telegrams.

Jos. D. Sayers, *Governor.*

Washington, *March 22, 1901.*

His Excellency Joseph D. Sayers, *Governor, Austin, Tex.:*

Will keep you posted, as requested. Matter is just at the stage when definite advice will be given very shortly. Mayor and governor and White are working together to-day.

Wyman.

SAN FRANCISCO, CAL., *March 22, 1901.*

Surgeon-General WYMAN, *Washington:*

Saw governor, mayor, and Washington committee, who agreed to raise funds for immediate work as follows: Disinfect all infected houses, provide hospitals for suspects, detention houses, and morgue. General disinfection Chinatown with betterment of light and air space. Did not mention Sacramento because I wanted this well started and governor is not in amenable mood to-day. Authorize office and stenographer, latter at once, $25 monthly. Please send Flint, of Chicago, Barker's assistant, for autopsies and inspection dead and to train regular officer; also four of best young officers with good training and tact. Will do all possible quickly as I can. Please act promptly, and if possible let me select from available youngsters.

WHITE.

WASHINGTON, *March 22, 1901.*

Surgeon WHITE, *San Francisco Cal.:*

Office authorized. Nominate and place stenographer on duty. Will send Flint. Wire names of young officers desired. Will wire again to-morrow. Your telegram received with much satisfaction. Flexner here and sends congratulations.

WYMAN.

SURVEILLANCE OF CHINESE IN PACIFIC COAST TOWNS.

On March 23 a letter, of which the following is a copy, was mailed to the health authorities of all the principal towns on the Pacific coast, with a view to bringing about a general watchfulness for any possible plague infection which might exist among the Chinese inhabitants thereof. Following the copy of this letter will be found a synopsis of the answers received thereto, showing the conditions existing in the towns referred to:

[Letter.]

TREASURY DEPARTMENT,
OFFICE OF SURGEON-GENERAL M. H. S.,
Washington, D. C., March 23, 1901.

SIR: Referring to the presence of bubonic plague in San Francisco, information has been received from Surgeon White that the business interests and the mayor of San Francisco and the Governor of California have all united harmoniously in work intended to eradicate the disease. I inclose herewith an article published in Public Health Reports of March 15, page 539, which states facts which may account in part for the slow extension of the disease.

I wish to further state that it seems to me to be impossible to determine how long the disease has been there, but the suspicion is that it may have prevailed there for a long while, possibly since 1896, when the plague was epidemic in Canton, most of the inabitants of Chinatown, San Francisco, being Cantonese.

It has been intimated that plague may, in like manner, be present in any of the Pacific coast ports which have a Chinese population. It becomes, therefore, very important to arrive at a definite determination concerning the matter. The plan for doing this, which is approved by members of the special commission which recently served for the Government in San Francisco, is as follows: To insist on the careful examination for at least one month of every dead Chinaman. For this purpose the establishment of a morgue or other suitable place would be necessary, and much would be gained by employing faithful Chinese attendants. It would require, also, the services of some one who is familiar with the disease, and who would be able to make bacteriological examinations to determine the presence or existence of the plague bacillus. It has been found that the diagnosis of plague during life is oftentimes extremely difficult, and the best method of determining if it has existed in a Chinese community is as outlined above. It is believed that with the exercise of good judgment and tact such an examination would be made without exciting alarm and without attracting great public attention. I would strongly recommend that this method be adopted and I am making the same recommendation to other ports. I wish to state that I have no reason for suspecting the existence of plague in your city. The project is one of precaution, justified, I believe, by the history of the disease in San Francisco.

I would be pleased to hear from you on the subject, and should you need the aid of this Bureau in the employment of some bacteriologist who might be entirely agreeable, the Bureau is ready to assist to this extent or in other ways that may seem to be necessary.

Respectfully,

WALTER WYMAN,
Surgeon-General M. H. S.

[Synopsis of answers to above letter.]

Portland, Oreg., March 28, 1901.—Two thousand to 3,000 Chinese in this city, the number depending on the time of year, there being fewer in the hop-picking season and when the canneries are in operation. Eleven Chinese have died during this month, several deaths resulting from pneumonia and several from consumption. Those who die unattended by a white physician are seen by the coroner before burial, but no necropsies are performed. Conditions at Chinese joss house very bad.

April 5, 1901.—Commissioner coroner, and city physician met and decided to perform a necropsy on any Chinaman dying in the city during the following month, and also, in case of anything suspicious being discovered, to take advantage of the Bureau's offer to make a bacteriological examination. Steps to be taken by the health commissioner to improve sanitary conditions of joss house by painting and increasing the lighting and ventilating facilities. (Report from Assistant Surgeon Fox.)

Tacoma, Wash., March 30, 1901.—Has no Chinatown. Only six Chinese in city. Chinese are not allowed to settle in the city. Quite a number of Japanese, whose quarters are examined weekly. (Report from Acting Asst. Surg. T. J. Schug, who is also health commissioner.)

Seattle, Wash., March 30, 1901.—No deaths have occurred among Chinese in Seattle since November, 1900. (Report from Assistant Surgeon Robinson.)

San Diego, Cal., March 30, 1901.—Board of health promises to provide for postmortem examinations, including bacteriological examination of all Chinese dying in San Diego. But one Chinese death in last year, cause of death being tuberculosis. (Report from Assistant Surgeon Decker.)

Los Angeles, Cal., April 1, 1901.—Board of health will establish thorough inspection of Chinese quarters and make bacteriological examination of all dead Chinamen. Fifty-seven Chinese deaths since January, 1900, all from well-recognized causes. (Report from Health Officer Powers.)

Port Townsend, Wash., April 2, 1901.—Chinese population small. Only two deaths among Chinese in last six months, and those under circumstances in no way suspicious. (Report from Passed Assistant Surgeon Gardner.)

CORRESPONDENCE—Continued.

[Telegrams.]

WASHINGTON, *March 24, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Wired Flint, but have not yet received reply. Flexner thinks he will gladly accept. I will pick out the best young men I can for you unless I hear from you as to your choice. Until they arrive, authorized to draw on marine hospital. Gassaway notified. You are authorized to accept any reasonable proposition for office rent, promptly reporting. Inform me soon as possible of facts concerning Sacramento, either by wire or letter. Letter mailed you to-day.

WYMAN.

SAN FRANCISCO, *March 24, 1901.*

Surgeon-General WYMAN, *Washington:*

After report of commission (think it was February 24) one patient on passenger train from Sacramento to San Francisco died, think it was next day. Diagnosis confirmed by bacteriological examination. Flexner and Barker know the facts. * * * [Here are named officers desired as assistants.] Want to use bacteriological outfit, perhaps temporarily, at San Francisco quarantine till place arranged. Site not yet selected for detention and other purposes. Difficulties many. It will take longer than expected to organize, but will do my best.

WHITE.

WASHINGTON, *March 27, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Authorized to use bacteriological outfit temporarily at San Francisco quarantine.

WYMAN.

WASHINGTON, *March 29, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Flint accepted; was ordered to proceed. Has probably started. Mark White ordered to report to you. Billings and Currie ordered. Can send Francis later and some others, if necessary. Flexner suggests Dr. Harold Brun, University of California, and Dr. Ryfkogel as valuable aids. You are authorized to nominate and place on duty, if necessary. Will arrange for payments in San Francisco. Send wire daily for present, giving all possible information as to situation.

WYMAN.

SAN FRANCISCO, CAL., *March 29, 1901.*

Surgeon-General WYMAN, *Washington:*

Telegram received. Will officers have special temporary duty status? Plans being formulated to carry out my advice. Will wire anything tangible soon as done.

WHITE.

WASHINGTON, *March 30, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

See Professor Taylor and transmit such information as possible concerning plague at Seattle.

WYMAN.

WASHINGTON, *March 30, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Flint will arrive Monday. Billings and Currie en route.

WYMAN.

SAN FRANCISCO, CAL., *March 30, 1901.*

Surgeon-General WYMAN, *Washington:*

Will see Taylor. I am not informed regarding Seattle, except indefinite statements by San Francisco people; that same thing exists in Seattle as in San Francisco, and opinion held by Barker and Flexner that it is possible, even probable, for whole coast. Persistent rumors from Bakersfield, and it is now stated that local Chinatown was burned last week, and press does not mention it. Dr. Cross, of Visalia, Cal., believes plague is now present in Bakersfield; victims largely white, and type pneumonic.

WHITE.

SAN FRANCISCO, CAL., *March 31, 1901.*

Surgeon-General WYMAN, *Washington:*

In yours regarding Taylor, did you mean Sacramento instead of Seattle? Also please answer regarding status of officers. Expect to have conference with Orientals to-morrow. Site secured for morgue and efforts made in other directions.

WHITE.

APRIL, 1901.

[Telegrams.]

WASHINGTON, *April 1, 1901.*

HASTINGS, *Marine-Hospital Service, Los Angeles, Cal.:*

Confidential. Plague was rumored three months ago Bakersfield. Afterwards declared to be vicious pneumonia. Persistent rumors again, and that local Chinatown was burned last week and no mention made in press. Dr. Cross, of Visalia, believes plague is now present in Bakersfield. Victims largely white, and type pneumonic. Proceed there immediately and quietly investigate rumor.

WYMAN.

WASHINGTON, *April 1, 1901.*

Surgeon WHITE, *Occidental Hotel, San Francisco, Cal.:*

In mine regarding Taylor. I meant Seattle. Have ordered Hastings to quietly investigate rumor regarding Bakersfield.

WYMAN.

WASHINGTON, *April 1, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Collector, San Francisco, authorized to pay payrolls, subsistence, and traveling expenses, and materials purchased to suppress plague on your certification. Warrant, $2,500, will be mailed collector to-morrow. Letter follows to-day. Officers detailed to you on special duty.

WYMAN.

SAN FRANCISCO, CAL., *April 2, 1901.*

Surgeon-General WYMAN, *Washington:*

Met the governor, the mayor, April 2. Arrangements have been made State to disinfect San Francisco, providing morgue, hospital, barracks, crematories, and operate same work. Probably it can be April 3. All interested promise lose no time to obtain best possible results. I should have William Lindgren and 4 additional officers experienced in disinfection. There are no experienced disinfectors available for employment, therefore all will have to be taught, and the best available men needed to push work rapidly. Request authority to employ several Orientals as guides and interpreters. I understand State will also employ certain number. Good policy in both cases, also facilitating work. Misunderstood yours of March 30. Saw party yesterday. Will get full information to-night and transmit.

WHITE.

WASHINGTON, *April 3, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Telegram April 2 received. Will send 2 additional officers at once. Others may be sent later. Will send, if requested, 2 hospital stewards familiar with disinfection, as Peck and Kolb. On requisition will also send 3 to 6 hospital attendants from quarantine station familiar with disinfection. Lindgren tied up with Pan-American Exposition. Rosenau states J. McFarland, 225 Tenth avenue, Richmond district, San Francisco, faithful and experienced in disinfection; formerly commander of the launch.

WYMAN.

WASHINGTON, *April 3, 1901.*

Hon. JOSEPH D. SAYERS, *Governor, Austin, Tex.:*

Mailed you yesterday Public Health Reports, giving statement of findings of commission and statement of conditions. Work has begun in earnest on broad scale with marked unanimity between State, city, and Federal authorities. Will write.

WYMAN.

BAKERSFIELD, CAL., *April 3, 1901.*

Surgeon-General WYMAN, *Washington:*

Severe epidemic, apparently vicious pneumonia, began four months ago, now about disappeared. Approximately 200 cases and 80 deaths; not confined to any class or age. Am assisted by all authorities in making thorough inspection without publicity. Fire in Chinatown accidental. Unless further developments, will leave to-morrow. Letter report follows.

HASTINGS.

ANGEL ISLAND, CAL., *April 3, 1901.*

Surgeon-General WYMAN, *Washington:*

Another case of plague, Chinese, dead April 1, found yesterday, Pacific street; septicæmic type; animal inoculation made laboratory here.

KINYOUN.

WASHINGTON, *April 4, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Hastings reports vicious pneumonia, began four months ago, now about disappeared; not confined to any class or age; fire in Chinatown was accidental. Fox reports health commissioner of Seattle informs him no death among Chinese since November.

WYMAN.

WASHINGTON, *April 5, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Authorized to nominate and employ guides and interpreters, as requested your telegram April 2. Have ordered Peck and will inform you regarding Young and other officers to-morrow. Wire whether active measures have begun and what they are, for response to inquiries.

WYMAN.

REPORT ON SUSPICIOUS CASES AT BAKERSFIELD, SHOWING THEM TO BE APPARENTLY CASES OF ACUTE LOBAR PNEUMONIA.

As will be seen by the foregoing telegrams, suspicious cases of pneumonia were being continually reported at Bakersfield, Cal., and finally, on April 1, Assistant Surgeon Hastings was ordered to that town to make thorough inspection of conditions and report thereon. Following is Dr. Hastings's report, stating that the cases reported were apparently acute lobar pneumonia:

[Letter.]

LOS ANGELES, CAL., *April 5, 1901.*

SIR: I have the honor to report my return to-day to this station from Bakersfield, Cal., where I was ordered by bureau telegram of April 1 for the purpose of investigating an epidemic of vicious pneumonia prevalent in that locality and giving rise to rumors of being an epidemic of the pneumonic type of plague. I have to report the result of my investigations, as follows:

Upon arrival at Bakersfield the night of the 2d, I called on some of the prominent members of the medical profession and learned their experiences with the disease. The next day the county health officer, the city health officer, and the coroner were seen and their views and experiences were very freely given, as well as permission to examine the records of their offices. In the county hospital a death had occurred the day before from "pneumonia," and fortunately we succeeded in getting the body before burial. A post-mortem examination was then made for my benefit, the findings of which will be referred to later.

The epidemic began about the middle of November. The first few cases were believed to be ordinary lobar pneumonia. Later there occurred cases of such severity, where the symptoms were so severe and out of proportion to the small amount of lung tissue involved, that suspicion was aroused as to the possibility of its being the pneumonic type of plague. A post-mortem was made on one of the rapidly fatal cases on January 15. No notes were kept, but the physician who made the examination states that the appearances were those of a virulent septic pneumonia. There was no large amount of lung tissue involved. The bases of both lungs were deeply congested and presented a partly gangrenous appearance; the pleuræ were adherent and covered with a thick, tenaceous exudate, sero-purulent in character. The pericardium presented a similar appearance; the heart was covered, especially the lower part, with thick flakes of exudate. There was very little fluid in the pleural cavities. The glands around the bronchi were slightly swollen and soft, about the size of the end of the little finger. The spleen was enlarged and soft; the other abdominal organs were normal. The base of the brain was covered with the same exudate as were the pericardium and pleura. Death had ensued in three days. The patient's nurse, a man, was taken sick and died in two days. Specimens were taken from the lungs, including the exudate, the heart, liver, spleen, and kidneys, and sent to the State board of health for examination. No report was made for some time. In the meantime a representative of the State board of health of Texas came down from San Francisco, stating that the examination proved suspicious of plague; and in a few days Texas quarantined against Bakersfield. The quarantine was removed in two or three days. The city health officer subsequently wrote for information as to the findings from the examination of the specimens sent, and was informed that the disease was a septic pneumonia. This ended the investigations.

The symptoms usually were those of acute lobar pneumonia—the onset sudden and ushered in by a chill. In the more severe cases, where death resulted quickly, there was little and sometimes no appreciable consolidation; slight cough, often very little expectoration; usually, but not always, "rusty" sputum; high fever, considerable delirium, and rapid failure of the heart. The bronchial glands were found in fatal cases to be swollen; also the cervical and abdominal, but never very large. In some cases the inguinal glands were enlarged also. The lymphatic glands of this region and the neck, however, did not feel soft or appear inflamed at all, but rather appeared to be like those from syphilis or scrofula. There were approximately 200 cases and 90 deaths.

The records of the coroner's office show: December, 32 deaths from pneumonia, out of a total of 64; January, 38 deaths from pneumonia, out of a total of 77; February, 16 deaths from pneumonia, out of a total of 32; March, 4 deaths from pneumonia, out of a total of 30. The disease was not confined to any age, sex, or race. The Chinese, of which there are about 800 in a total population of about 9,000, suffered but slightly. Since January there has not been a death among them from "pneumonia," judging from the records.

The epidemic came suddenly, about the time of the prevalence of grippe elsewhere, and some of the physicians state that symptoms of grippe frequently preceded the initial chill of the pneumonia. The epidemic has died out on the advent of mild weather, without any attempt at disinfection or quarantine.

My personal observations consisted of examining a convalescent pneumonic patient of one physician, looking through the county hospital, a careful inspection of Chinatown, and witnessing the post-mortem examination above referred to. The latter case gives the following history: Patient was a male, a native of California, resident of Bakersfield, aged 31 years; admitted to the hospital March 26; died April 2. For a week before admission had complained of pain in back, head, and legs. The day of admission had a chill, slight pain in chest, on the right side; no cough, no expectoration, but very rapid breathing and general appearance of being very sick. After admission to hospital there was slight cough and very little expectoration; temperature was high throughout, and during the last forty-eight hours the patient was delirious. The post-mortem examination showed consolidation of the right lower lobe, dry pleurisy, with adhesions of both sides; very little fluid exudate, no fibrinous exudate either of the pleura or pericardium. The bronchial glands were slightly enlarged and soft; the glands elsewhere were normal. The other post-mortem appearances were negative. Sections of the lung, glands, liver, and spleen were sent to Surg. J. J. Kinyoun, at San Francisco, for examination.

From personal observations, which were limited, and chiefly from the experiences of the local physicians, and from the course of the epidemic, I am of the opinion that the disease was epidemic pneumonia of the acute lobar variety. The rapidly fatal cases, with symptoms of intense toxæmia, presented such small involvement of the lungs probably on account of the rapid invasion by the pneumococci.

The severity of the disease may, in part, be accounted for by the local conditions. Bakersfield is a "boom" city, where conditions of life are hard; the weather during the past winter has been very bad, and men of all sorts have been crowded together, with very poor sanitary surroundings.

Very respectfully,

HILL HASTINGS,
Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

CORRESPONDENCE—Continued.

[Telegrams.]

Angel Island, Cal., April 6, 1901.

Surgeon-General WYMAN, *Washington:*

Bacteriologist of the city board of health reports another case of plague, not bubonic, dead April 4, after illness of four days in San Francisco, arriving here from Santa Barbara sick. Spleen shows characteristic organism.

KINYOUN.

WASHINGTON, *April 6, 1901.*

HASTINGS, *Los Angeles, Cal.:*

There was a death from plague at San Francisco April 4, according to the bacteriologist of the State board of health. Illness of four days after arrival from Santa Barbara. Proceed Santa Barbara to ascertain whether plague is now present in, and wire conditions, including number of Chinese residents.

WYMAN.

SAN FRANCISCO, CAL., *April 6, 1901.*

Surgeon-General WYMAN, *Washington:*

Active measures not begun. Have urged erection of morgue, hospital, barracks, and laboratory. Will begin inspection Monday morning by mutual consent. Six Companies reject most of my propositions. Have laid matter before State and city authorities and will see Judge Maguire to-day. While some active work will be started Monday anyway, its effectiveness will be little until Chinese are forced or persuaded into line.

WHITE.

WASHINGTON, *April 6, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Have received two or three telegrams from Kinyoun recently concerning cases of plague in San Francisco. Have wired him to give all this information to you, as Bureau expects all information of this character to come from you.

WYMAN.

SAN FRANCISCO, CAL., *April 8, 1901.*

Surgeon-General WYMAN, *Washington:*

Began inspection to-day, Flint and M. J. White cleaning, and bichloriding begun under Billings and Currie. I have secured Chinese hospital for plague use, and doing all possible to push as well as assist California and San Francisco boards.

WHITE.

SANTA BARBARA, CAL., *April 8, 1901.*

Surgeon-General WYMAN, *Washington:*

No plague here; 300 Chinese. No death any disease since December. Thoroughly inspected with health officer. Return to-night.

HASTINGS.

WASHINGTON, *April 9, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Following received from Hastings at Santa Barbara:

"No plague here. Three hundred Chinese. No death any disease since December. Thoroughly inspected with health officer. Return to-night."

Your telegram April 8, showing work actually begun and you pushing and assisting, received with satisfaction.

WYMAN.

[Letter.]

San Francisco, Cal., *April 10, 1901.*

Sir: 1. I have the honor to invite your attention to the inclosed clipping, which brings to light new difficulties encountered in contending with the situation here.

2. If this newspaper clipping proves to be correct, as I have every reason to believe that it is, the modus vivendi under which we are operating will be destroyed and a new arrangement necessary.

3. It had been agreed that the city was to provide for hospitals, detention barracks, a morgue, laboratory, a garbage destroyer, and similar matters, and to pay the operating expenses of the same, while the State was to provide a disinfecting corps and materials to do the work of cleaning and disinfecting Chinatown under my direction.

4. I am inclined to think that the State will refuse to comply with its obligation when it becomes known that the city will be unable to do so.

5. Work was begun on Monday morning, as I telegraphed you, and it is possible to cleanse and disinfect the better class of Chinese houses after a vast deal of persuasion and insistence applied both to the disinfecting corps and the Chinese, but there are certain houses in .

6. The block upon which we are now engaged, and in almost every block in Chinatown, which I frankly believe will have to be gutted of their total contents and such contents burned before we can have any assurance that the contagium has been removed. There has probably been an average of two cartloads of filth removed from each large house, and much more remains. I yesterday inspected rooms in the cellars of some of the worst districts, which I do not believe to have been entered before by any white man in many months, and some of these rooms, practically underground and separated from either street or alley by flanking rooms on either side, are absolutely devoid of light and ventilation, are dirty beyond anything that may be imagined by the Caucasian mind, and filled with a stifling odor suggesting months of opium smoking, with occasional urination upon the floors. I can best describe it by saying that it is the accentuated odor of a rat den.

7. The State officials, who are undertaking to do this work under my directions, claim that they have no authority for gutting these premises; state that it would be an interference with personal rights, and that it will cost a great deal of money and possibly bring about injunctions through the courts. Many of these dens are so constructed that gaseous disinfection will be of no avail, and the only possible means of removing infection from them will be by saturating floors, walls, ceiling, furniture, clothing, and every other possible contents with bichloride of mercury.

8. It is possible that I may be compelled to telegraph you for instruction in this matter within a few days, and I therefore write this letter, not with a view to request present action on your part, but in order that, should such action become necessary, you may fully understand my meaning when I do telegraph.

9. With regard to the inspection I have to report that an endeavor to deceive me is being made by the Chinese Six Companies, who have so far shown an average of 2½ persons sick per day, despite my protest. I yesterday informed Mr. Chew Wo, secretary of the Six Companies, that inasmuch as he had agreed to deal with me in the same fair and honest manner in which I was dealing with him, and inasmuch as I was fully aware that out of a population of 15,000 persons under ordinary conditions there would be at least 150 sick, I demanded of him that if he proposed to deal fairly with me he show me the 150 sick in question. He thereupon agreed to call a meeting of the Six Companies and lay the matter before them, insisting that the sick must be shown. I am now awaiting the result of that meeting.

10. This letter being only one for the information of the Bureau, I shall speak quite plainly about this matter, both as to inspection and disinfection, and say that from present appearances the thorough cleansing of Chinatown appears to be almost a physical impossibility, and that I am certain of the absolute dishonesty of the Chinese in the promises that they have made, and well satisfied that they will fulfill nothing that they can possibly avoid.

11. I shall in this instance, as I have ever done, perform the duties assigned to me to the best of my ability, but feel that it is only justice not only to myself but to the Service to say that I do not feel hopeful regarding the results.

Respectfully, yours,

J. H. White, *Surgeon, M. H. S.*

The Surgeon-General Marine-Hospital Service.

The inclosure referred to in the above letter was a clipping from the San Francisco Call of April 10, stating that the city auditor had declared the appropriations made by the board of supervisors for cleaning

Chinatown and the erection of a contagious-disease hospital to be illegal.

[Telegrams.]

WASHINGTON, *April 13, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Wire necessities as to additional medical officers you may need to prosecute your work. Bureau has found it very difficult to find additional officers immediately. Three officers have been ordered to return from abroad and will soon arrive.

WYMAN.

WASHINGTON, *April 15, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Have you heard anything further regarding plague in Sacramento?

WYMAN.

SAN FRANCISCO, CAL., *April 16, 1901.*

Surgeon-General WYMAN, *Washington:*

Two telegrams received yesterday afternoon, 2 last night. Nothing new about place referred to, but no question that case of March 24 originated there. Thanks for assistants. Foster left here Saturday. Address communications 420 California street.

WHITE.

WASHINGTON, *April 17, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Referring to your letter of the 10th, matters therein were presented to Henry T. Scott, who is here, and who reasserts determination to have all agreements of governor's committee complied with, and has sent vigorous wires to Young and Herron. Following was sent to Young: "Article in Wednesday's Call, 10th, discouraging regarding auditor's position as to appropriation. Officials here regard our agreement will be carried out, not only in spirit proposed but in the strict letter of the agreement. State and city authorities must cooperate or assume responsibility of nonaction. Can assure you of hearty cooperation of authorities here, provided our agreement is fulfilled. Nonfulfillment in the least particular at this time will prove disastrous."

WYMAN.

SAN FRANCISCO, CAL., *April 18, 1901.*

Surgeon-General WYMAN, *Washington:*

Confidential wire of the 17th just received. Can Mr. Scott exert pressure toward compelling Chinese to show sick and dead, this being greatest difficulty? Next in importance is explained in paragraphs 5 and 6 of my letter of the 10th. Met State and city officials yesterday; discussed matter. Answer promised Saturday.

WHITE.

WASHINGTON, *April 19, 1901.*

Hon. HENRY T. SCOTT, *Holland House, New York:*

Surgeon White wires as follows:

"Can Mr. Scott exert pressure toward compelling Chinese to show sick and dead, this being the greatest difficulty? Next in importance is paragraphs 5 and 6 of my letter of the 10th. I met State and city officials yesterday and discussed the matter. Answer promised Saturday."

Five and 6 referred to relate to certain houses in Chinatown which will have to be gutted of their total contents and such contents burned before assurance can be had that the contagion has been removed. I am certain that the statement is not overdrawn; and if you can assist as requested by White, the Department will be very thankful.

WYMAN.

WASHINGTON, *April 19, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Have wired Scott, who is now in New York, contents your telegram 18th, requesting him to take action.

WYMAN.

NEW YORK, *April 19, 1901.*

Surgeon-General WYMAN, *Washington:*

I have your dispatch and have telegraphed committee. You can rest assured the matter will be taken hold of.

HENRY T. SCOTT.

WASHINGTON, *April 19, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Scott has wired committee, and says can rest assured matter will be taken hold of.

WYMAN.

WASHINGTON, *April 22, 1901.*

WERTENBAKER, *Marine-Hospital Service, New Orleans, La.:*

For your information, and to answer possible inquiries, commission's full report on plague in San Francisco is published in Public Health Reports April 19. Cases they found were published March 22 and statement as to their work March 29. Full publication delayed for purpose avoiding newspaper excitement and to facilitate progress of the work in San Francisco. No agreement was made to suppress any facts or reports.

WALTER WYMAN.

WASHINGTON, *April 22, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Referring to your letter April 10, paragraphs 5 and 6, it has been suggested by certain parties familiar with the situation that if the radical measures concerning certain houses must be adopted, it would be advisable, if possible, to leave such measures until later, as the inference might be that these radical measures are generally necessary. It might be possible to adopt some measures regarding these houses without taking extreme measures at present time. This for your consideration. Radical measures toward the start might excite opposition which would not exist later on.

WYMAN.

SAN FRANCISCO, CAL., *April 23, 1901.*

Surgeon-General WYMAN, *Washington:*

Referring yesterday's telegram, will, if so directed, treat all houses in uniform manner, leaving drastic measures for final adoption. Doing this will necessitate refusal to give State a certificate of satisfaction as to each block, which certificate State agent very anxious to get. Please wire me forbidding issuance of certificate of satisfaction under circumstances.

WHITE.

WASHINGTON, *April 23, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Yesterday's telegram as to deferring the more drastic measures to toward the end was sent simply for consideration at another's suggestion. I can not direct in the matter, and in view of your telegram to-day am inclined to believe the suggestion is not a good one. Though possibly feasible in exceptional cases, it may not be in accord with sound sanitation principles.

WYMAN.

San Francisco, Cal., *April 23, 1901.*

Surgeon-General Wyman, *Washington:*

Raids on China girls being made coincidental to our work embarrassing and possibly may make Chinese lose confidence in and attribute raids to Service. Reported that they are instigated from either Department of Justice or Immigration Bureau. Please get remission of this work.

White.

Washington, *April 25, 1901.*

Surgeon White, *San Francisco, Cal.:*

Referring to your telegram April 23, Department of Justice will wire to-day to district attorney to stop the raids.

Wyman.

[Letter.]

Department of Justice,
Washington, April 26, 1901.

Sir: Acknowledging receipt of your letter of yesterday, suggesting that arrests of Chinese girls in San Francisco are embarrassing the work of the Marine-Hospital Service in eradicating the bubonic plague in Chinatown, San Francisco, I have the honor to say that I have directed the United States attorney by telegraph to suspend arrests for the present, but to proceed in due course of law upon the arrests already made.

I desire to add that I shall be pleased to be advised when the work of preventing and punishing the alleged slave traffic in Chinese girls, which the Treasury Department and this Department have jointly undertaken in cooperation with the State authorities, may properly be resumed.

Very respectfully,

P. C. Knox,
Attorney-General.

The Secretary of the Treasury.

[Telegrams.]

San Francisco, Cal., *April 27, 1901.*

Surgeon-General Wyman, *Washington:*

There was a death from probably plague, City and County Hospital, San Francisco, April 25. Cultures taken. Will report results.

Person a white woman, nonresident, whose husband is also ill. Was seen yesterday and blood specimen taken. Cultures made. No information as to source obtainable at present.

White.

Washington, *April 29, 1901.*

Surgeon White, *San Francisco, Cal.:*

Wire what time it is customary for the Chinese to leave San Francisco for the canneries and if possible a list of the places to which they go and whether it is possible to establish any surveillance over their departure.

Wyman.

San Francisco, Cal., *April 29, 1901.*

Surgeon-General Wyman, *Washington:*

Telegram regarding fish canning hands received. Understand they are already gone. Will inquire further and report. Think case mentioned your letter 22 was at Honolulu. Will report promptly any further information.

White.

WASHINGTON, *April 30, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Case at Ann Arbor was saved with yersin sent from here. The yersin here is kept in cool, dry place and is perfectly good. Do you want some sent on?

WYMAN.

SAN FRANCISCO, CAL., *April 30, 1901.*

Surgeon-General WYMAN, *Washington:*

Have plenty yersin, which has been well kept, and if as recent as Washington supply should answer purpose.

WHITE.

The "case at Ann Arbor" mentioned in above telegram was a student at the University of Michigan, who was stricken with plague and recovered. He contracted the disease while working with cultures brought from San Francisco.

MAY, 1901.

SAN FRANCISCO, CAL., *May 4, 1901.*

Surgeon-General WYMAN, *Washington:*

Please grant authority for traveling any road within radius 100 miles of San Francisco and take Flint with me. May possibly discover why cases not being found.

WHITE.

WASHINGTON, *May 4, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Authority to travel, yourself and Flint, granted as requested in to-day's telegram.

WYMAN.

WASHINGTON, *May 11, 1901.*

Surgeon WHITE, *San Francisco:*

Referring to your telegram of the 4th, Treasury Department has secret service. Are you in need of it?

WYMAN.

SAN FRANCISCO, CAL., *May 14, 1901.*

Surgeon-General WYMAN, *Washington:*

Regarding matter mentioned in your telegram of May 11, it will be a good thing. How long shall I have to wait for the person particularly desired to look out for travelers from San Francisco transferring across bay with surrounding country? Think it is likely that if we do not discover plague before June 4 the State health authorities will assert diagnosis was an error and absolutely no plague is now present in San Francisco.

WHITE.

WASHINGTON, *May 14, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Though it is understood autopsy notes are negative, no objection is made on part of Bureau to your furnishing to agents of State board.

WYMAN.

WASHINGTON, *May 15, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Referring to my telegram of May 11 regarding secret service, persons will call upon you at once. Letter to-day.

WYMAN.

[Letter.]

TREASURY DEPARTMENT, MARINE-HOSPITAL SERVICE,
Washington, May 15, 1901.

SIR: Referring to your several telegrams and letters, it appears evident to the Bureau that some systematic practice is in vogue by which Chinamen dead of plague and living Chinamen affected with it are being concealed and possibly transported to other places.

Under these circumstances, even though the efforts may prove futile, it is absolutely necessary that no measure should be overlooked in endeavoring to locate these plague-stricken Chinamen. The action taken now will in the future be subject to close examination. If, for example, six months, a year, or more from this time plague is found in some other place and it is traced to some of these Chinese who left San Francisco, it will be incumbent on the Bureau to show that every possible agency under the control of the Department was utilized to discover the surreptitious exodus. Your own telegrams show the great care that you have taken to ascertain the facts, and the Department has placed at your service the special agent of the Department at San Francisco to assist in the investigation. To-day, with the consent of the Secretary, I called upon Chief Wilkie, of the secret service, who agreed to immediately wire his chief officer in San Francisco instructions to call upon you and give all possible aid.

The per diem salary of this secret-service officer is chargeable to their own fund; but if it should be necessary for him to detail an assistant, or more than one, whose whole time would be given to this investigation, the salaries and expenses must be paid from the epidemic fund. The only fund for use by the secret service is that for the suppression of counterfeiting.

In addition to the above, Assistant Secretary Taylor has to-day written to the Chinese inspectors of the Treasury Department directing them to render you all possible assistance. These gentlemen are as follows: James R. Dunn, chief inspector, and J. H. Barbour, assistant inspector, and they are ordinarily addressed from here "care collector of customs." It is possible that Mr. Dunn is now in Portland, Oreg.

Furthermore, if, with the aid of these three classes of agents, you feel that you are still unable to find where the Chinese are going, by direction of Assistant Secretary Spaulding you are authorized to confer with the Pinkerton Detective Agency, and if emergency requires the immediate employment of this agency, you are authorized to incur the expenditure, but if practicable to wire an estimate and get approval before incurring expense, it is desirable that you should do so.

In the meantime the work of cleaning Chinatown should go on to full completion, and it is the determination of the Department to pursue the matter, even if it develops into a chase of the Chinese.

I inclose a list of some code words to be added to the code. The special-inspection code, gotten up for your use when you first went to the Pacific coast, dated December 26, 1900, is hereby abrogated.

Respectfully,

WALTER WYMAN,
Surgeon-General, M. H. S.

Surg. J. H. WHITE, *San Francisco, Cal.*

[Telegrams.]

SAN FRANCISCO, CAL., *May 22, 1901.*

Surgeon-General WYMAN, *Washington:*

Have had information the State board intends, if we do not find plague before June 9, to declare no plague is now present in San Francisco nor has been for sixty-five days, and demand that Texas, on these grounds and in view of existing measures, release California from quarantine. Have already communicated to governor belief that sick and perhaps dead have been sent out of Chinatown, and asked permission to inspect Chinese districts in environs and neighboring cities. This of course, even if practicable, will be difficult and can not be done within time stated without additional assistance. It may, however, defer action. Would suggest that pratique for Chinatown be withheld until we are satisfied on this point. Authorize me to tell governor's committee, which meets to-day, all above facts and that I will only certify to disinfection of houses where actual plague was found and that other houses were only mechanically cleansed and may have been subsequently infected by concealed cases. Learn from Scott you intend to visit San Francisco. If it is in any way possible, would most strongly urge you to come within a week or ten days to discuss many important matters which can not be adequately treated by telegraph or mail. Situation in this way would be much simplified.

WHITE.

WASHINGTON, *May 22, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Replying to your telegram of to-day, you are authorized to communicate with governor's committee as requested.

WYMAN.

WASHINGTON, *May 22, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Did you receive my letters of May 15 and 16? Notwithstanding negative results thus far, Department believes it necessary to continue in patience and persistence.

WYMAN.

SAN FRANCISCO, CAL., *May 22, 1901.*

Surgeon-General WYMAN, *Washington:*

Two telegrams to-day and your letters 15th and 16th received and fully understood. My telegram last night meant that unless measures are taken to find sick we may be forced out.

WHITE.

WASHINGTON, *May 23, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Do not quite comprehend your telegram May 22, in which you say "unless measures are taken to find sick." It is supposed here that this is exactly what you are doing, as evidenced by my letters of May 15 and 16 and your telegrams indicating search being made. Possibly you refer to request of governor to inspect districts in environs and neighboring cities. Is there any difficulty in making such inspections, and is governor's assent absolutely necessary?

WYMAN.

SAN FRANCISCO, *May 23, 1901.*

Surgeon-General WYMAN, *Washington:*

Am using every means available to find sick and results negative. Consider the governor's assent necessary for outlying districts and asked it last Saturday, but received no answer to that nor any other letter addressed to him. Have asked aid of committee, who promise immediate meeting, and after receiving their answer will wire further.

WHITE.

WASHINGTON, *May 24, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

How many blocks of Chinatown have been cleaned up and how many remain? In replying, if practicable, make use of the map which accompanies commission's report.

WYMAN.

SAN FRANCISCO, CAL., *May 24, 1901.*

Surgeon-General WYMAN, *Washington:*

Eight half and 3 whole blocks done, which is all west of Stockton and all north of Washington, except half of the 2 blocks lying between Kearney and Stockton on Washington. Special actual disinfection completed in all houses infected since

November 1. There remain 5½ blocks, and these contain enormous subterranean stores of silks, requiring great care to prevent damage. All must be moved out before cleaning the houses. One contains 80,000 cubic feet.

WHITE.

WASHINGTON, *May 26, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Can you mail immediately detailed autopsy reports thus far made?

WYMAN.

SAN FRANCISCO, CAL., *May 27, 1901.*

Surgeon-General WYMAN, *Washington:*

Will start stenographer on autopsy notes to-morrow and send as fast as the 130 pages are done.

WHITE.

SAN FRANCISCO, CAL., *May 27, 1901.*

Surgeon-General WYMAN, *Washington:*

Request authority to employ Wong Chung, former chief secretary Chinese Six Companies, $5 daily. Will send regular nomination by mail. Referring to my telegram May 22, governor's five committeemen have not responded. Regarding matter in my telegram May 22, regarding June 9, please consider carefully. Understand Marine-Hospital Service may be asked to get out June 9.

WHITE.

WASHINGTON, *May 27, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Authorized to employ person named in your to-day's dispatch. June 9 matter receiving consideration.

WYMAN.

WASHINGTON, *May 28, 1901.*

Dr. SIMMONS, *Editor Journal American Medical Association, Chicago, Ill.:*

Journal May 25 reports plague death, white woman, San Francisco, April 25. Can you wire Bureau your authority this report?

WYMAN.

WASHINGTON, *May 28, 1901.*

Dr. SIMMONS, *Editor Journal American Medical Association, Chicago, Ill.:*

Referring to my telegram recently sent, I had report of this case as being probably plague, but no final report.

WYMAN.

WASHINGTON, *May 28, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Journal American Medical Association May 25 reports death, white woman, in San Francisco of plague, April 25. Investigate and telegraph full particulars.

WYMAN.

CHICAGO, ILL., *May 28, 1901.*

Surgeon-General WYMAN, *Washington:*

Our authority for plague case referred to was, as it turns out, unreliable.

GEORGE H. SIMMONS.

WASHINGTON, *May 28, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Referring to my previous telegram to-day, case referred to is undoubtedly the one mentioned in your telegram of April 27, but I can find no subsequent telegram confirming the diagnosis.

WYMAN.

SAN FRANCISCO, CAL., *May 28, 1901.*

Surgeon-General WYMAN, *Washington:*

Inference your second telegram correct. You will find negation of diagnosis my telegram May 6, no suspicious case since April 4, has been confirmed.

WHITE.

SAN FRANSISCO, CAL., *May 29, 1901.*

Surgeon-General WYMAN, *Washington:*

Wrote governor, May 18, inviting attention to small mortality and morbidity Chinatown since work began, suggesting Chinese exodus, and requesting authority to investigate outside. Letter was most friendly and courteous. Governor, May 28, wired as follows:

"You will please take notice that the State authorities have not requested you nor any other officer of the Federal Government to investigate or participate in an examination of the health conditions of the State outside the limits of the city and county of San Francisco, and that the State board of health is complying in every respect with the conditions requested by the Federal authorities and is fully carrying out the agreement with the United States Treasury Department. I have always been ready and desirous of making the most searching investigation into the health conditions of San Francisco and other points within this State, but the investigation should be conducted on fair and honest lines by those representing the Federal Government and the State. I decline to allow you to assume control of State health affairs and pursue secret and hidden investigations. The State authorities are now, and always have been, abundantly able to look after the health conditions of the State without interference. Your mere suspicion from the improved health of the Chinese district that the sick are being removed from San Francisco, is not only unwarranted as a conclusion, but I know it to be unfounded in fact. I therefore decline to authorize your agents, whose responsibility to me is unknown, to do as you have proposed and requested. If there is any city, town, or district within this State where you yourself desire to make investigation, let me know and I will send some one suitably qualified professionally to look over the matter with you, but one-sided secret examinations, such as have been witnessed in San Francisco, to its great detriment and to that of the State, will not be permitted elsewhere. If you desire to have a conference with me at any opportune time I will be pleased to comply with your wish, but communications by mail or telegraph are unsatisfactory.

"HENRY T. GAGE, *Governor.*"

Above telegram shows existing spirit more aptly than any letter that I have been able, up to date, to send you. Advise consideration in connection with matter mentioned in former telegrams as to intention of stopping work on June 9.

WHITE.

WASHINGTON, *May 30, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Referring to telegram of the governor to you, May 28, it is more objectionable in form than in substance. Have just had conversation with Moore, President's friend, just returned with Presidential party, who states he had four conversations with the governor concerning these matters and impressed latter with fairness of intent of Service, and he states that the governor is fearless and honest, but crude in expression and sensitive to Federal disregard or reflection on California. He was assured by Moore of honesty of attitude of Service, and Moore spoke in complimentary terms of fine sanitary work which has been already accomplished in Chinatown.

WYMAN.

WASHINGTON, *May 30, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Careful reading of agreement signed by the governor's committee shows they can claim provisions of same have been complied with, all known infected premises having been disinfected and inspection having failed to discover any cases. I saw Flexner last week, who thinks quite possible plague may have been disappearing. If no verification of suspected concealment, it is only natural for State authorities to wish this status recognized, and if no further developments within ten days or two weeks it might be justifiable to stop all work except autopsies. Very desirable, however, if possible, to complete the cleansing of Chinatown, and, while the governor's committee did not agree to this with Department, your telegram March 22 states the governor, the mayor, and Washington committee agreed to disinfection of Chinatown, with betterment of light and air space. Therefore, after consulting Secretary I propose to wire Scott, detailing facts as above, stating no plague has been found, but urging the completion of the work in Chinatown as a matter of prophylaxis, particularly in view enormous increase plague Canton and for confidence it would give other States with regard to California. If this is accepted, we will keep on to a finish; if not accepted, must withdraw, but our recommendation is of record. It seems to Bureau situation will not permit attempt at enforcing more than as above. Wire your views on situation and outlook and whether you coincide with foregoing.

WYMAN.

SAN FRANCISCO, CAL., *May 30, 1901.*

Surgeon-General WYMAN, *Washington:*

Two telegrams received. In two or three weeks cleaning Chinatown will be finished. Don't agree with Flexner, nor that State board of health and governor believe that there is no concealment; but impossible to prove concealment. Afraid necropsies will be discontinued coincident to other stoppage. Wrote very fully yesterday and expressed same views as last 50 words your long message. Don't advise forcing anything. Can explain fully when I see you.

WHITE.

JUNE 1–OCTOBER 31, 1901.

On June 2 Surgeon-General Wyman left Washington for St. Paul, Minn., to attend the annual meeting of the American Medical Association, leaving Surg. George Purviance, the senior division officer, in charge of the Bureau, the Surgeon-General keeping in touch with the Bureau, however, by telegraph, and returning to Washington June 9. The following telegraphic correspondence will explain the situation up to July 5, showing the return of Surgeon White, the completion of the work in Chinatown by Passed Assistant Surgeon Blue, and the agreement with the governor of California for a continuation of inspection work by the Service, with necropsies and laboratory examinations:

[Telegrams.]

WASHINGTON, *June 6, 1901.*

Surgeon-General WYMAN, *Magee Hotel, St. Paul, Minn.:*

White wires as follows:

"Have had consultation most important members governor's committee yesterday and chairman State board to-day. Think arrangements can be made under certain conditions to do some inspection outside and to continue inspections and necropsies here after cleaning is concluded. Urgently recommend orders to Washington to lay whole matter fully before you, in order to effect arrangements before present work is done."

GEDDINGS,
Passed Assistant Surgeon, M. H. S.

WASHINGTON, *June 7, 1901.*

Surgeon-General WYMAN, *St. Paul, Minn.:*

Instructions in your telegrams fully complied with.

PURVIANCE,
Surgeon, M. H. S.

WASHINGTON, *June 7, 1901.*

Surgeon WHITE, *San Francisco, Cal.:*

Report to Bureau immediately in person for conference. Transportation will be wired you to-day.

PURVIANCE,
(For Surgeon-General.)

In accordance with above orders Surgeon White left San Francisco for Washington, June 10, P. A. Surg. Rupert Blue remaining in charge of the plague situation and to complete the cleansing of Chinatown.

[Telegrams.]

SAN FRANCISCO, CAL., *June 17, 1901.*

Surgeon-General WYMAN, *Washington:*

Will complete cleaning Chinatown June 22. Legal condemnation of a few unfit habitations by the local board of health will require two more weeks.

RUPERT BLUE.

WASHINGTON, *June 18, 1901.*

Governor GAGE, *Sacramento, Cal.:*

Dr. White has arrived and reports work of cleansing and disinfecting Chinatown, San Francisco, nearly complete and that he is satisfied the work has been done by your agents under his advice in full compliance with the understanding. A few unfit habitations remain to be condemned, which work is in progress by the San Francisco supervisors, and all will be completed within a few days. It is a matter of mutual congratulation that no cases have been found during the progress of this work and that the outlook is so encouraging. For our mutual protection and interests I believe it very essential that the supplementary work indicated in Dr. White's telegram to you of June 7 should follow, as it will cause continued satisfaction and prevent comment and criticism of both the State and Service which would otherwise be likely to follow. The Bureau here is able, by reason of its central position, to know the sentiments which prevail, and a quiet performance of the labors suggested by Dr. White is, in my opinion, advisable from every standpoint. I have read this telegram to the Secretary of the Treasury, who coincides therewith and if necessary will communicate with you himself. Will you kindly wire your views?

WALTER WYMAN,
Surgeon-General, M. H. S.

Dr. White's telegram of June 7, mentioned in the above communication, will be found in the report of Surgeon White on the work in Chinatown, hereinafter published.

[Telegrams.]

SAN FRANCISCO, CAL., *June 21, 1901.*

Surgeon-General WYMAN, *Washington:*

Disinfection of Chinatown completed to-day. I await your instructions.

BLUE.

WASHINGTON, *June 22, 1901.*

Passed Assistant Surgeon BLUE, *San Francisco, Cal.:*

Discontinue services all Chinese employees except Wong Chung.

WYMAN.

WASHINGTON, *June 24, 1901.*

Passed Assistant Surgeon BLUE, *San Francisco, Cal.:*

Discontinue services of Ryfkogel to-day.

WYMAN.

SAN FRANCISCO, CAL., *June 24, 1901.*

Surgeon-General WYMAN, *Washington:*

The local board of health's contract for the laboratory and morgue expires June 30. Please advise at once whether Bureau will assume contract July 1.

BLUE.

WASHINGTON, *June 28, 1901.*

Passed Assistant Surgeon BLUE, *San Francisco, Cal.:*

Obtain and accept proposals for rental laboratory and morgue July 1, including office, and surrender office on California street. Continue inspection sick and autopsy of selected cases. Believe advisable to have (Assistant Surgeon) White make examinations and Currie morgue and laboratory work. Make full recommendations and reports.

WYMAN.

[Letters.]

SACRAMENTO, CAL., *June 24, 1901.*

SIR: I am much pleased to receive through yourself assurances that the agreements made by this State have been performed "in full compliance with the understanding," and likewise greatly value the statement, emanating from such high scientific authority as yourself (especially having before us the past grave blunders of others not having had your wide experience), that now it is certain and a matter of mutual congratulation "no case" (of plague) "has been found during the progress of this work," which result was by me at all times confidently expected.

The State authorities have made thorough and extraordinary investigations, and I am fully advised as to the health conditions of California, and know there is no occasion at this time for the further investigation suggested by Dr. White, and am most happy to report that it will not be necessary for your Department to be further burdened.

However, if it is your pleasure, as a mere precautionary measure, to make further autopsies, or if there is any city, town, or district within this State which you, through your Department, desire to inspect, please be good enough to name such competent persons as you desire and I will most cheerfully send others qualified professionally and in every particular to cooperate and look over the situation with them and thereby further your highly commendable purpose in that regard. But one-sided or secret examinations (not at all times participated in by the State), such as have in the past been witnessed in San Francisco to its irreparable detriment and to that of the whole State, you can readily see from the result of your own recent searching and valuable examination should not and can not be again permitted.

I appreciate most deeply your kind offices and shall be glad to cooperate with you in future.

Respectfully, yours,

HENRY T. GAGE,
Governor.

Surgeon-General WYMAN, *Washington, D. C.*

TREASURY DEPARTMENT,
OFFICE OF SURGEON-GENERAL M. H. S.,
Washington, July 5, 1901.

MY DEAR SIR: I have to acknowledge receipt of your valued telegram of the 26th ultimo, and in reply thereto have to state that Surgeon White and other officers of the Service have been ordered to return from San Francisco to their respective stations, leaving Dr. Blue with two assistants to continue in the matter of autopsies for a short time to come.

I have the honor to remain, very respectfully, yours,

WALTER WYMAN,
Surgeon-General M. H. S.

His Excellency HENRY T. GAGE,
Governor of California, Sacramento, Cal.

Since the completion of the work in Chinatown the force under Passed Assistant Surgeon Blue has been kept at work in San Francisco hunting for any plague infection which may possibly exist and performing necropsies in all suspicious cases, together with bacteriological examinations. The Service is maintaining, at 641 Merchant street, a commodious executive office, a well-equipped bacteriological laboratory, embracing several large rooms, and has leased an appropriate ground-floor apartment for use as a morgue. As will be seen by the list of cases at the beginning of this report on plague in San Francisco, there have been reported since July 1, 1901, 16 cases of plague, 4 of which recovered. Every effort is being made to discover any cases which may occur, and prompt measures are taken in each proven case to eradicate all traces of infection attendant thereon. The last case was reported October 31, having died the day before.

Whether, as Surgeon White suggests, San Francisco has been cleared of the infection and reinfected from outside places, or whether cases of the plague were successfully hidden in San Francisco itself during the cleaning of Chinatown and remained to perpetuate the disease, is still an open question despite the efforts being made to solve it. Reports from outside places have all been negative, although in every case reported as having probably originated in a locality other than San Francisco measures have been taken to trace the infection. As the case stands at present the disease, though still believed to be existent, is quiescent, and the close watch being maintained by the Service, as well as by the health officers of the coast, for any cases which may appear, would seem to render well nigh impossible any serious outbreak obtaining a dangerous headway. The work of inspection now going on in San Francisco will be maintained until assurance is complete that the infection has disappeared, or circumstances make it appear necessary to institute more radical measures.

REPORT OF SURG. J. H. WHITE ON WORK IN CHINATOWN, SAN FRANCISCO, MARCH–JUNE, 1901.

TREASURY DEPARTMENT,
OFFICE OF SURGEON-GENERAL, M. H. S.,
Washington, July 1, 1901.

SIR: I have the honor to submit the following report upon the transactions of the Service under my charge in San Francisco, Cal., from the latter part of March, 1901, to the date of my departure from San Francisco for Washington on June 10, 1901.

After the return from Washington of the committee appointed by the governor of California to confer with you regarding the plague situation in the city of San Francisco, I met Governor Henry T. Gage and the said committee at the rooms of the governor at the Palace Hotel, in the city of San Francisco, and discussed with them the work to be done and the manner in which it should be done. Some days later, on March 25, the representatives of the governor, Mr. Daniel Kevane, Dr. W. P. Matthews, secretary of the State board of health of California, and Dr. William Lawlor, an agent of the State board; also the mayor and the city board of health, at the rooms of the latter organization in the City Hall, the meeting being presided over by the Hon. J. D. Phelan, mayor of San Francisco. A tentative understanding was reached at this meeting, but it was not until March 31 that the final agreement was arrived at between the governor and the mayor, in which the tasks of the State and city were clearly defined. Under the terms of this agreement it was arranged that the State should furnish the disinfectants and the men for the work of disinfecting Chinatown, the city should provide and maintain a bacteriological laboratory, a detention barracks, a hospital, a morgue, and a garbage destructor. For the Service I undertook to inspect the sick and the dead and to supervise the work of disinfection and isolation.

Pursuant to the agreement arrived at, as above stated, the State board of health supplied such disinfectants as were used and employed, a force of six or eight physicians and a number of attendants, ranging at different times from 50 to 120, all of these being under the direction of Dr. Lawlor and Dr. Stone. The city carried out its agreement to provide hospital, detention barracks, morgue, laboratory, and to provide for the destruction of garbage.

The actual work did not begin until April 8. The plan of procedure was as outlined in the accompanying letters addressed to the governor of California, the mayor of San Francisco, the president of the board of health of the city and county of San Francisco, and to the Chinese Six Companies, and the very prompt answers thereto on the part of the mayor and the president of the board of health.

[Letter.]

San Francisco, Cal., *April 4, 1901.*

Sir: I have the honor to invite your attention to the inclosed copy of a letter which I have this day addressed to Mr. Chew Wo, which letter is self-explanatory.

After an interview with Mr. Chew Wo, I find that he did not understand fully the measures which were to be taken, consequently this full explanation was necessary.

I beg that you will, as agreed, render me your assistance in securing the acquiescence of the interested parties in putting these measures into effect, and more especially the acquiescence of the lawless element which is not under the control of the Six Companies.

Respectfully, yours,

J. H. White,
Surgeon, M. H. S.

His Excellency Henry T. Gage,
Governor of California.

(Same letter sent to the Hon. James D. Phelan, mayor of San Francisco.)

[Inclosures.]

San Francisco, Cal., *April 4, 1901.*

Sir: I wish to invite your attention to the accompanying plan for the eradication of plague from Chinatown, San Francisco.

The plan proposed will not inflict any inconvenience upon anyone except such as is absolutely necessary, and the measures stated are the least which will be effective for the removal of plague from Chinatown, and without such immediate removal it is only a question of a short time before radical measures may become necessary, and measures so radical as to involve the wholesale destruction of property and almost certainly ruin the business interests of the Chinese quarter of San Francisco, with serious damage to others.

The measures proposed are as follows:

First. The Chinese to make every concession toward a thorough daily inspection of all the sick and dead, and twice daily if the inspectors so desire.

Second. The sick who may be deemed by the inspectors as at all suspicious to be removed to a hospital designated for that purpose, where they may be under constant observation.

Third. All of the dead to be removed to a morgue in Chinatown prepared for that purpose, and such post-mortem examinations made by the health officers as may be deemed necessary to determine the cause of death, and such examinations will extend no further than is absolutely necessary to determine the cause of death.

Fourth. All persons who have been in contact with cases of plague to be removed to a place of detention which shall be provided, and there kept under observation for two weeks.

Fifth. A general disinfection to be done in every building in Chinatown and a most thorough disinfection of all buildings where suspicious cases have occurred.

Sixth. The dead who have been determined to have died of plague to be placed in hermetically sealed coffins, the coffin filled with quicklime, the outside of it to be thoroughly disinfected after sealing, and immediately buried.

Seventh. All plague corpses to be interred in a spot separate from all other burials, and no corpse to be disinterred or removed within one year from the time of burial.

Finally, I ask you to place before your Six Companies and other influential and interested Chinamen this paper and obtain their written agreement to put these measures into effect.

Assuring you at the same time that if your people act in good faith with me I will carry out to the letter and in spirit every promise which I make to you.

Respectfully, yours,

J. H. WHITE, *Surgeon, M. H. S.*

Mr. CHEW WO,
Secretary Chinese Six Companies, San Francisco, Cal.

TREATMENT OF INFECTED HOUSES.

1. All houses to be fumigated for forty-eight hours with 5 per cent sulphur dioxide (5 pounds to each 1,000 cubic feet air space) with all contents in place and nothing distributed.

After this is done remove the partitions which interfere with disinfection.

2. All textiles, except such as will be damaged by heat, are to be subject to steam disinfection for twenty minutes at temperature of 215° F.

3. All goods in the house which can not be disinfected by steam must be either soaked in bichloride of mercury solution 1–1,000, or in 5 per cent carbolic-acid solution.

4. Such things as come under neither of these clauses and are incapable of disinfection, such as food stuffs, must be carried to the crematory and burned.

5. After the house is empty, the walls are to be scraped and the floors soaked and scrubbed with saturated lye solution, and then with plain water, and subsequently walls and floors washed down with 2–1,000 bichloride solution and, after drying, whitewashed thoroughly.

All rooms which have not enough light and air to be provided with additional openings, and this point is to be determined by an officer of the Marine-Hospital Service.

When possible heat will be used to thoroughly dry out the house before it is reoccupied.

An officer of the Service will be always available to advise or direct as to methods of disinfection.

J. H. WHITE, *Surgeon, M. H. S.*

EXECUTIVE DEPARTMENT, MAYOR'S OFFICE,
City and County of San Francisco, April 4, 1901.

DEAR SIR: I am in receipt of copy of your letter to Mr. Chew Wo of the Chinese Six Companies. I shall be pleased to give you every possible assistance and ask that you report to me what specific work you require of this office from time to time.

Yours, truly,

J. D. PHELAN, *Mayor.*

Dr. J. H. WHITE, *Surgeon, M. H. S.*

[Telegram.]

SACRAMENTO, CAL., *April 6, 1901.*

J. H. WHITE, *Surgeon, M. H. S., San Francisco:*

Your letter to governor of April 4, containing letter to Chew Wo, just handed to me. Will be in Frisco on Wednesday. I entertain no doubt of acquiescence of all parties. Will call on you to that end on Wednesday or Thursday.

DANIEL KEVANE.

[Letters.]

APRIL 13, 1901.

DEAR DOCTOR: I have just had a conference with Dr. Lawlor, and we have both agreed that there are certain habitations in the block which is now being cleansed which can not be rendered sanitary by any ordinary means, and which are in such a condition that they should be condemned as a nuisance, and with this idea in view I beg that you will confer with me at the earliest possible moment in order that we may arrange a joint meeting between yourself, Dr. Matthews, Dr. Lawlor, and Attorney G. A. Knight, together with your attorney, if you so desire, to see what steps can be taken toward the abatement of these nuisances.

Yours, very truly,

J. H. WHITE,
Surgeon, M. H. S.

Dr. J. M. WILLIAMSON,
President Board of Health, City and County of San Francisco.

APRIL 13, 1901.

DEAR DOCTOR: I believe it to be advisable that all Chinese dead should be taken to one centrally located spot for proper examination before interment, in order to definitely determine the cause of death, and to as nearly as possible assure ourselves of having seen all cases which have died of plague.

To this end I request that you take the necessary steps to cause such bodies to be placed in the morgue which has been secured by your board for that purpose, there to be examined by a joint committee of your and my representatives, and, to provide a further assurance against mistakes, I would suggest that before a burial permit is issued for such bodies, a certificate signed by both of our representatives be presented to the proper authorities, which certificate shall state that these representatives are satisfied as to the cause of death. It is not necessarily incumbent upon them to make a positive diagnosis of the case, and, so far as this office is concerned, the certificate of actual cause of death is still issued by Dr. Wilson or other physicians, but our representatives should certify that it is or is not plague, and without such certificate no burial permit should be granted.

In brief, I do not desire to supersede any existing regulations, but simply to add an additional precaution against surreptitious burials.

Yours, very truly,

J. H. WHITE, *Surgeon, M. H. S.*

Dr. J. M. WILLIAMSON,
President Board of Health, City and County of San Francisco.

SAN FRANCISCO, CAL., *April 15, 1901.*

DEAR SIR: In reply to your communication of the 13th instant, relative to the signing of certificates setting forth the causes of death among Chinese, I will state that the following order has this day been issued:

"APRIL 15, 1901.

"NOTICE TO THE CLERKS IN THE HEALTH OFFICE.

"From this date you will not issue a removal or interment permit upon the presentation of the death certificate of any Chinese person dying in this city and county, unless said certificate is signed by Dr. White, Flint, or Ryfkogel, as a representative of the Federal authorities, and Dr. Kellogg, as representative of this department.

"J. A. EMERY, *Secretary.*"

Yours, very truly,

JOHN M. WILLIAMSON,
President Board of Health.

Dr. J. H. WHITE,
Surgeon, M. H. S., San Francisco, Cal.

SAN FRANCISCO, CAL., *April 15, 1901.*

DEAR DOCTOR: Referring to the matter of garbage, I am reliably informed that ragpickers and others are taking away much of this class of articles from the garbage brought out of the houses in Chinatown, which proceeding is, of course, dangerous, and I have therefore to suggest that the city take prompt action looking toward both the suppression of this ragpicking by the police and the removal of this garbage in a sanitary manner.

Yours, very truly,
J. H. WHITE,
Surgeon, M. H. S.

Dr. J. M. WILLIAMSON,
President Board of Health, City and County of San Francisco.

SAN FRANCISCO, CAL., *April 26, 1901.*

SIRS: Referring to the matters discussed at your hall on the night of April 24, and more particularly to your request for an exemption from autopsy on such bodies as died unmistakably of disease other than plague, and to your further request that disinfection when once begun upon a house should be completed at the earliest possible moment, and not to cause one of your countrymen to have to vacate his house on two or three successive occasions before the work is completed, I have to inform you as follows:

As soon as the work has become a little more thoroughly established, we will make every endeavor to set apart in a building now used for receiving the dead a nice apartment for the reception of people of the best class, and to provide a decent and respectable means for taking the bodies to this hall, and will not, when the cause of death is absolutely and thoroughly established as not being plague, in any way interfere with said body other than by inspection. It should be fully understood, however, that it is necessary that the body be brought to this place for inspection to be made by Dr. Flint, who is not only fully conversant with plague, but also understands the customs and sentiments of the Chinese people and desires to treat them with every possible consideration.

Regarding the second matter relating to disinfection, I would say that the work of disinfection is being done by the State board of health, and that I have used and will continue to use every effort to impress upon Dr. Lawlor's agents the necessity for finishing the work on any one house as soon as possible in order to prevent inconvenience to the occupants thereof, and I believe that Dr. Lawlor appreciates this matter and will himself do the best he can in that direction.

Yours, very truly,
J. H. WHITE, *Surgeon, M. H. S.*

PRESIDENTS AND SECRETARIES, CHINESE SIX COMPANIES,
San Francisco, Cal.

In the actually infected houses some articles were destroyed by fire, some soaked in the bichloride of mercury solution 1–1000, some subjected to 5 per cent volume sulphur-dioxide gas for a period of forty-eight hours. The general disinfection method outlined to the Chinese Six Companies in my letter of April 4 was largely applied, not only to Chinese habitations, but to many filthy specimens of the Latin quarter contingent and impinging upon the Chinese quarter. The assignment of the officers who reported to me for duty in this work is as follows:

To P. A. Surg. Rupert Blue was assigned the general supervision of disinfection in Chinatown and specifically to oversee the complete method prescribed for infected houses.

Asst. Surgs. H. B. Parker, W. C. Billings, G. M. Corput, and D. M. Currie were each to supervise the work of from twenty to thirty disinfectors in carrying out the general method, and to carefully search for and point out hidden places needing disinfection.

Asst. Surg. M. J. White and Acting Asst. Surgs. J. M. Flint and H. L. A. Ryfkogel were to inspect all sick and dead, to make autopsies on all the latter, and to pursue bacteriological investigations in all cases which might be in the slightest degree suspicious.

These officers in their inspections were accompanied and very much assisted by Mr. Wong Chung, and there were employed to aid them in the work allotted to them the necessary attendants for the laboratory and morgue.

Hosp. Steward F. H. Peck and Laboratory Attendant Lindgren were to superintend the work of the special disinfectors in actually infected houses, working under the general supervision of Passed Assistant Surgeon Blue.

On the second day of actual work, April 9, I became suspicious that all the sick were not shown to us, and called upon Mr. Chew Wo, the secretary of the Chinese Six Companies, who had agreed to render us the same aid as his predecessor, Wong Chung, rendered the plague commission in February of this year. Indeed, the work of inspection having begun some time in advance of disinfection, my suspicions were aroused before this time. I informed Chew Wo that our work could and would avail nothing if we did not see all the sick and all the dead, without any exception, and that it was to the interests of the Chinaman as well as the white man that this should be done, and the disease eradicated, in order that no more quarantine measures might be necessary. On April 12, the above expostulation having availed nothing, I again saw Mr. Chew Wo and told him that his people were not keeping their promise, and I also informed the State and city authorities of these facts.

I insert here letters, which, though written some time later, are nevertheless appropriate at this point as setting forth very clearly the facts in this case:

[Letters.]

SAN FRANCISCO, CAL., *May 18, 1901.*

SIR: I have the honor to invite your attention to certain facts in connection with the work now being done in Chinatown and to request your consent to the plan which I propose and which I hope may be successful.

Since the beginning of the investigation of sick and dead in Chinatown, on April 8, the apparent mortality among Chinese has dropped to 75 per cent or less, and in the total population there were only shown from April 8 to 30, inclusive, 65 sick persons, most of whom were suffering from such chronic diseases as consumption, cancer, etc. My inspectors have been shown only an exceedingly small number of acute diseases, and a number so small as to be ridiculously out of proportion out of a population of 15,000 people, in which population there would be, according to all vital statistics, at least 100, and probably 150, sick from acute diseases at all times. This is against an actual showing by the Chinese Six Companies of three or four such cases.

Take either horn of the dilemma you please, and grant for the sake of argument that they have shown all the actual dead, that number of dead during the month of April from the 8th, amounting to 22, is preposterously out of proportion and five times as great as it would be for 65 sick; fully as much out of proportion as the said 65 sick are out of proportion to the large population of the town. Pardon me if I have gone rather exhaustively into this matter, but I wish you to understand the situation fully in order that you may understand the request I am making, which request is as follows:

That you authorize me, through my agents, to investigate sickness and deaths quietly in any other town or city in the State; this request being made because I feel assured that the sick are being sent out of the city whenever they present any appearance which might in any possibility be plague, or be mistaken for plague, and I know that it is needless for me to say to you that all of the very arduous and extensive work now being done in Chinatown will be absolutely of no avail if houses after being cleaned are going to be reinfected by being used as abiding places of infected persons.

You can see that, should the Chinese so desire, there is nothing to prevent them from taking a sick man from Chinatown to Oakland, or even to Sacramento, after nightfall or early in the morning before operations in Chinatown by your and my people have begun.

I trust that you will give this matter your earliest possible consideration.

Respectfully,

J. H. WHITE, *Surgeon, M. H. S.*

His Excellency HENRY T. GAGE,
Governor of the State of California, San Francisco, Cal.

(Same letter sent to the Hon. J. D. Phelan, mayor.)

SAN FRANCISCO, CAL., *May 18, 1901.*

GENTLEMEN: On May 7 I addressed a letter to the secretary of the Chinese Six Companies, a copy of which I inclose to you.

I have not received any response to this letter, and do not feel, therefore, that the secretary of the Chinese Six Companies has shown in this matter either good faith or common courtesy.

It is absolutely necessary that I should have access to all the sick, as otherwise the arduous and extensive work of cleansing Chinatown will be absolutely of no avail; the isolation of suspects and the immediate disinfection of houses after such suspects being as much a necessity to removing the infection of plague from Chinatown as any other portion of the measures being undertaken, and, indeed, this is the most important of all the measures. I, therefore, in the interest of the city of San Francisco and the State of California, far more than for my own personal interest in the matter, ask you to use your influence to bring about the desired end.

I have addressed another letter to the secretary of the Chinese Six Companies, a copy of which I also inclose.

Respectfully,

J. H. WHITE,
Surgeon, M. H. S.

Messrs. MCGUIRE & GALLAGHER,
San Francisco, Cal.

Messrs. McGuire & Gallagher did not answer my letter of the 18th; neither did the governor of the State respond to my letter of the same date, although he did send Mr. Daniel Kevane to my office, and this latter gentleman promised to take measures to find the sick.

These measures, which were instituted a few days later, consisted of putting in a force of 5 doctors to make a house-to-house inspection, but could not avail anything, because the Chinese can and will hide their sick, if so inclined, even were there 100 inspectors at work in Chinatown at one time. The ramifications of a house which has been orientalized are so great and so tortuous as to be utterly beyond the conception of the occidental mind.

On April 22 and 23 the agents of the State board called at the laboratory and morgue and made angry protests against an autopsy having been made without their being present, and further against any suspicion being attached to a case which was autopsied, thus showing very clearly that the agents of the State board did not desire that plague should be found. I authorized Drs. Flint and M. J. White to say to Drs. Lawlor, Stone, and Bothe, the agents of the State board, that they were courteously invited to be present at autopsies; that the hours from 10 to 3 each day were set for such work, and that they had been fully informed, and if not present it was through their own fault. They were, furthermore, authorized to inform these gentlemen that they were present at all as a courtesy and not a right, this portion of the work having been duly and officially set apart in the agreement as work to be done by the city and the Marine-Hospital Service and not by the State. There never was any objection offered at any time to the presence of the agents of the State board at any autopsy, but I declined to have the autopsies postponed over night, not because I had no desire to be accommodating, but because the bacilli of putrefaction might destroy the traces of plague, if such existed, in any given case.

As in a measure confirming my suspicions that the Chinese were being removed, it may be well to state that at a meeting held on April 24 with the president of the Chinese Six Companies this president stated that at the beginning of our inspection all the feeble Chinese able to do so had left the city, and assigned this as one reason for the small number of sick which we were able to find.

After the statement of this fact, in my notebook I made the following note:

> If this is true, what are the indications as to plague in the country and interior towns?

It was my belief then, and that belief has subsequently been developed into a practical certainty, that many of the interior towns and villages have been infected by these means, and these in turn are now reinfecting the city of San Francisco, and thus nullifying all the work done in that city.

These points were brought out in my letter to the governor of California, dated May 18, 1901, hereinbefore contained.

I addressed at various times letters to Dr. Lawlor, the agent of the State board of health, who was placed by the governor in charge of that portion of the work which was done by the State, and I append five of these letters among the correspondence hereto attached. None of my letters were answered by Dr. Lawlor, and they are inserted in this report with the statement that they were ignored in order to accentuate the fact that a spirit of fairness and frankness on the part of the Service was not met by the State as it should have been. * * *

[Letters.]

SAN FRANCISCO, *April 11, 1901.*

DEAR DOCTOR: I am informed by Drs. White and Flint that there is some dissatisfaction caused by the leakage of water through a floor onto one or more Chinese beds, as the result of the process of scrubbing, and that you suggest some possible change might be made to avoid this kind of thing. It is possible that your men might, by wetting the floor in sections, avoid this in most cases, or by first having the very dirty floors scraped and subsequently mopped instead of flooding, it might be avoided altogether.

The end which I wish to attain is the thorough wetting of the floor in every part with a strong solution of lye, and if this end is attained I shall be satisfied. I very much doubt, however, the ability of anyone to carry work of this sort to a conclusion without doing more or less damage, however careful they may be, and you will, of course, understand that I can not assume, nor can any of my officers assume, the responsibility for this damage. It would appear to me that the Chinese should be willing to put up with such little inconveniences as this for their part as an offset to the enormous inconvenience and expense to which they have subjected the nation, the State, and the city.

Yours, very truly,
J. H. WHITE,
Surgeon, M. H. S.

DR. WM. LAWLOR,
Agent State Board of Health, San Francisco.

SAN FRANCISCO, CAL., *April 23, 1901.*

DEAR DOCTOR: I have to request a definite answer at your earliest convenience with regard to the matter of whitewashing rooms to be discriminated for that purpose in Chinatown.

A good deal of work has been accomplished; a great many rooms have been cleansed which should have been also whitewashed, and, consequently, the whitewashing done now will put the Chinamen to a double inconvenience, which double inconvenience I wish to avoid as much as possible, and for that reason ask you to give me an answer at the earliest possible moment as to whether this work will be done.

If you personally can not give me a definite answer, please refer me to those who can.

Yours, very truly,

J. H. White,
Surgeon, M. H. S.

Dr. Wm. Lawlor,
Agent State Board of Health, San Francisco, Cal.

San Francisco, Cal., *May 4, 1901.*

Sir: Referring to the verbal request of Dr. Stone for a letter from me setting forth my opinion upon the work now being done in Chinatown, San Francisco, by the State board of health and under your personal direction, I have to say as follows:

The cleansing done in each known room of each house in the block completed and under way—practically all of that section of Chinatown north of Jackson street—has been very satisfactory, and the work with bichloride solution and lime has also been very well done so far as it has progressed.

I trust you may soon be able to condemn and destroy the rooms which have been designated as too dark and too filthy for effectual disinfection, so that the remaining original rooms may be properly cleansed and disinfected.

I am especially pleased that you destroyed the horribly filthy and vermin-ridden bedding in the old Chinese hospital (so called) on Pacific street, and in the nearby Latin den, believing disinfection of such stuff impossible by any other means than practical destruction.

You must, of course, see that I can not state that no infection remains in the section named, because we daily find hidden dens, and probably many such escape observation, and again because, except at the known plague foci, the work has been nominal in its character for most obvious reasons. This, however, in no wise reflects upon the character of the work which has been done, nor is it so intended.

Thanking you for courteous treatment, and with the statement that, while sure that we are not seeing all, nor nearly all, the sick, I wish you to fully understand that this is a matter for which I hold the Chinese alone responsible.

I am, very respectfully,

J. H. White, *Surgeon, M. H. S.*

Dr. Wm. Lawlor,
Agent State Board of Health, San Francisco, Cal.

San Francisco, Cal., *May 21, 1901.*

Dear Doctor: I have incidentally learned to-day that members of your staff are under the impression that my officers have forbidden the spraying with bichloride of a certain set of quarters which were being disinfected under the direction of Dr. Billings.

I wish to say, in this connection, that I do not object at any time nor in any place to additional measures of disinfection being superadded to those prescribed by me or by my officers, and that in the case mentioned, which case I think was one referred to me by Dr. Billings, I stated to the doctor that he should not insist upon the bichloride spraying because it did not appear to be an absolute necessity, no apparent suspicion attaching to the house in question.

If, however, the State forces desire to force the issue with the people residing in that house, and spray the room or rooms in question, I trust you will fully understand that I have no possible objection to its being done, nor have I any objection to the work being carried to the limit of a thorough disinfection of every house which is handled.

Trusting that this may remove all misunderstandings in this matter,

I am, sincerely, yours,

J. H White, *Surgeon, M. H. S.*

Dr. Wm. Lawlor,
Agent State Board of Health, San Francisco, Cal.

San Francisco, Cal., *June 1, 1901.*

Dear Doctor: I am informed by my assistants that they have received the following from one of your young doctors:

"We are instructed to inform Federal doctors that we are in charge of the squads, and they are to give no orders whatever concerning the work except through us. All they are to do is to inspect the work, and they are to distinctly understand this."

Now, I am perfectly willing to work to the letter of the agreement, but think it only fair to you as well as to myself to say to you that orders (if you choose to call them so) given by my assistants were only intended to facilitate rapid completion of work and its ready acceptance when done.

I will be glad also if you will communicate to me in writing all your wishes in matters of this sort, as otherwise fully avoidable misunderstandings may occur.

Yours, very truly,

J. H. White, *Surgeon, M. H. S.*

Dr. Wm. Lawlor,
Agent State Board of Health, San Francisco, Cal.

On May 21 I obtained the following self-explanatory letter from Mr. J. Winfred Pearson and, as will be observed, I immediately addressed a letter to Dr. Lawlor on this subject, this being one of the five letters which he did not answer. I further addressed a letter on the same date to Mr. J. P. Young, the chairman of the governor's special plague commission, setting forth these facts and stating the frankness and fairness with which our work was being done and that every record of my office was open for the inspection of any person who had any legitimate interest in the matter. I further, on the 22d, addressed another letter to Mr. Young, informing him that I had learned that it was the intention of the State to stop the work in Chinatown, and that it was my desire to be informed thereof, to which he responded on the 22d, as may be seen by the accompanying letters, that he would bring the matter to the attention of the governor.

[Letters.]

Office State Board of Health, Room 11, Ferry Building,
San Francisco, Cal., May 21, 1901.

Dear Sir: I am very sorry that I was out when you called yesterday, the more so as you and some of the State board discussed the matter of the board not receiving proper notification of the visits to suspected plague cases and post-mortem examination by Dr. White's staff. In regard to this matter I feel that we are not given the consideration due us, and from some data which I learned you possess I feel that you will agree with me. I shall be glad to discuss this matter with you any time you care to call.

Yours, etc.,

Wm. M. Lawlor.

Mr. J. Winfred Pearson,
Room 200, Safe Deposit Building, City.

San Francisco, Cal., *May 21, 1901.*

Sir: I wish to invite the attention of your committee to a state of affairs existing in Chinatown, and to solicit your influence in the removal of the conditions referred to and facilitate the work we have to do.

It is very apparent that if any just conclusions may be formed from statistics, we are not seeing more than a small percentage of the sick in Chinatown, nor quite all of the dead. Of course you will understand that this is an estimate and not an abstract statement of facts.

When the commission appointed by the Treasury Department undertook its work here in February last they received the hearty cooperation of the Chinese Six Companies, under the administration of Mr. Wong Chung, the then secretary of this organization, and had no difficulty in seeing the sick and dead. Since that time Mr. Wong Chung has been replaced as secretary, his term having expired, and the position is now occupied by Mr. Chew Wo, who has agreed to render us the same character of assistance as was rendered to the commission, but he has delegated this work to certain interpreters, and apparently is not taking the interest in the matter which was taken by his predecessor. We desired to have Mr. Wong Chung duly accredited by the Chinese Six Companies to assist us in this matter; but despite two letters to the said companies requesting that credentials be given Mr. Wong, no progress has been made in this direction, and the number of sick shown to us is decreasing rather than otherwise.

I shall send you to-morrow morning letters which I have addressed to his excellency the governor, to the Chinese consul, and to Mr. Chew Wo in my endeavor to correct this matter, and I request that you give this letter and the inclosed correspondence your attention at the earliest possible moment.

There is still another matter which I desire to lay before you, which is as follows: I have learned from various sources that there is a disposition on the part of the representatives of the State board of health to misinterpret the actions of the officers of this service and myself, and in this connection I wish to say to you, as I have repeatedly said to the gentlemen above mentioned, that every act of my subordinates or myself, and every record of my office is open for inspection to any person who has any legitimate interest in this matter. Nothing is concealed, and there are absolutely no ulterior motives in anything that we have done or have yet to do. Of course the remarks which have come to me may simply be rumors and be without warrant in fact, but I think it wise, nevertheless, to embrace this opportunity to state my position and that of my officers so clearly that there can be no just cause for misunderstanding us.

Respectfully,
J. H. White,
Surgeon, M. H. S.

Hon. J. P. Young,
Chairman, Chronicle Building, San Francisco, Cal.

San Francisco, Cal., *May 22, 1901.*

Sir: Since my letter to you on the 21st I have been informed that it is the intention of the State authorities, in the event of our not finding and identifying a case of plague before the 9th day of June, to stop work in Chinatown; and as this is a matter of very grave importance, in view of the facts stated in my previous communication, I beg that you will take this matter also into consideration and inform me whether or not this intention actually exists.

I am not in a position to quote the person who gave me this rumor, but simply give it to you as a rumor and with the request for information as to whether it has any foundation.

Respectfully,
J. H. White,
Surgeon, M. H. S.

Hon. J. P. Young,
Chairman, Chronicle Building, San Francisco, Cal.

Editorial Department San Francisco Chronicle,
San Francisco, May 22.

Dear Sir: I beg to acknowledge your communications of 21st and 22d instant, and to say in reply that I will bring the matter to the attention of the gentlemen who have been acting in an advisory capacity to the governor, and that as soon as we can confer on the subject I will communicate with you.

Very truly,
John P. Young.

Dr. J. H. White.

Another matter, and one which may serve to show the disinclination on the part of the Chinese Six Companies to afford any opportunity for arriving at correct conclusions with regard to the number of plague cases in Chinatown, is shown in the accompanying correspondence with the Six Companies and their attorneys, growing out of my desire to employ Mr. Wong Chung, the former secretary of the Chinese Six Companies, as an interpreter or agent in finding the sick.

The Six Companies evidently had a well-founded belief that Mr. Wong Chung would be honest with us, and they put all manner of obstacles in the way of our obtaining his services.

[Letters.]

San Francisco, Cal., *April 27, 1901.*

Sir: Referring to your conversation with me to-day, I have to request that you will state to your companies that I desire to employ and pay Mr. Wong Chung. His employment will be, therefore, no expense to the Six Companies whatever.

Yours, very truly,

J. H. White,
Surgeon, M. H. S.

Mr. Chew Wo,
Secretary Chinese Six Companies, San Francisco, Cal.

San Francisco, Cal., *May 7, 1901.*

Sir: I strongly desire, and feel that it is necessary, that I should have Mr. Wong Chung as the chief of the Chinese division of our work, and I therefore urge that you call a meeting of your Six Companies and have a proclamation issued to the effect that Mr. Wong Chung occupies the above-stated position, and direct the Chinese to respect him accordingly, and that you will allow Mr. Wong to obtain the lists of all the sick which are reported to you, in order that he may intelligently show the same to our inspectors; and I would urge the issuance of another special proclamation to your people insisting that they report all the sick, in order to facilitate and expedite the work of removing plague from Chinatown.

As I have before said, the sooner all the sick are shown to us and the sooner your people do as we ask the sooner will the work be finished and the trouble cease.

The employment of Mr. Wong will not in any way change the relations of this office with yours or with the Six Companies, and I wish these relations to be friendly and pleasant at all times.

Please call this meeting to-night.

Respectfully,

J. H. White,
Surgeon, M. H. S.

Mr. Chew Wo,
Secretary Chinese Six Companies, San Francisco, Cal.

San Francisco, Cal., *May 18, 1901.*

Sir: I wrote you a letter on May 7, requesting that you lay before the Chinese Six Companies certain matters and furnish me with their response, the particular matter being my desire that Wong Chung assist us in inspecting the sick.

This is a matter of great importance, but I have received no response to my letter. I therefore ask that you make arrangements for me to meet the presidents of your companies and other interested Chinamen on Monday night, as I wish to speak of this matter to them and lay before them again the importance of making arrangements to meet my wishes.

Yours, very truly,

J. H. White,
Surgeon, M. H. S.

Mr. Chew Wo,
Secretary Chinese Six Companies, San Francisco, Cal.

Chinese Consolidated Benevolent Association,
No. 738 Commercial Street,
San Francisco, May 22, 1901.

Dear Sir: Your letter of the 7th of May. We referred the matter to our attorneys, Messrs. Maguire & Gallagher, some time ago, that you may have the information from them. The later letter, 18th, was handed over to me through Mr. Joe Wing.

I shall call for meeting to-morrow night, as we were very busy in these two weeks on account of having some visitors from the Presidential party to call on our office.

Yours, respectfully,

CHEW WO.

Dr. J. H. WHITE,
Marine-Hospital Service, San Francisco, Cal.

SAN FRANCISCO, CAL., *May 24, 1901.*

DEAR SIR: Referring to your letters of recent date to the Chinese Six Companies regarding Mr. Wong Chung, we are instructed by the companies to inform you that they have, in compliance with your request, notified the Chinese people that Mr. Wong Chung is employed by you for the purpose of assisting in your work in Chinatown, and that he is to be recognized by Chinese people as one of your assistants. We are also instructed to suggest to you that it must be thoroughly understood that Wong Chung is not to be compensated in any way by the Chinese Six Companies for his work, as he is not employed by them.

Yours, very truly,

MAGUIRE & GALLAGHER,
Attorneys for Chinese Six Companies.

Dr. J. H. WHITE,
Marine-Hospital Service, San Francisco, Cal.

I submit herewith a list of the worst houses in Chinatown, which I furnished, at his request, to Dr. A. A. D'Ancona for the information of the board of supervisors of the city of San Francisco. No comment on this matter appears to me to be necessary.

[Letter.]

SAN FRANCISCO, CAL., *May 25, 1901.*

DEAR DOCTOR: In accordance with your request, I furnish you herewith a list of houses in Chinatown which are in whole or in part unfit for human residence, and in order to be more specific I will check with red ink my initials opposite such houses as I deem to be so far unfit for human residence that they will need to be destroyed either in whole or in part and can not be made fit by ordinary extensive repairs.

Stockton street.—No. 914: Basement, 5 rooms without sunlight and otherwise in poor condition.

Spofford alley.—No. 34: Cellar, 5 rooms besides 6 bunks, without sunlight; very bad. No. 22½: Cellar, 5 rooms without sunlight, in very bad condition. No. 8: Cellar, 5 rooms without sunlight. Extremely bad condition. No. 10: One room and a cellar. Absolutely dark and in bad condition.

Clay street.—No. 824½: Five rooms without sunlight; floor extremely bad. No. 812: Cellar, 2 rooms without sunlight; in bad condition.

Dupont street.—No. 813: Cellar, 6 rooms without sunlight. Extremely bad general condition.

Duncomb alley.—Those habitations comprising the lower tier of the blocks bordering on this alley.

Stockton street.—No. 720: Cellar. Sleeping accommodations for about 200 men. Partly under sidewalk. Should be torn out and whitewashed, or condemned entirely.

Sacramento street—Oneida place (The ovens).—No. 823½: One room. In my opinion, the whole property in the rear of Sacramento street, touching Oneida street, and known as "the ovens," should be condemned in its entirety.

Commercial alley.—All houses on both sides of alley, from Nos. 2 to 12, inclusive, should be either torn out or condemned, except possibly No. 6 and No. 11, upstairs rooms.

Jackson street.—No. 612a: Palace Hotel (so-called) A hallway leads into a court. Upon this latter there open three rows of rooms (first, second and third floors). The first floor consists of dark rooms too filthy for description and occupied by beggars whose physical condition and abject poverty is by far the worst I have seen in Chinatown. I strongly recommend that these rooms be closed up. The second and third floors are occupied by a better class of people than those just described but the rooms themselves (with some marked exceptions) should at least be renovated and painted before being further used.

Pacific street.—Nos. 636–638: Basement of back building; chicken coop on left of rear walk.

Washington alley.—Nos. 7–11: Old frame buildings; no cellar. Nos. 17, 19, 21, 23, 25: Frame buildings. Fish drying on roof. Sewage under floor in basement.

Jackson street.—No. 621: The foulest basement in Chinatown; dirty, no ventilation, no light, bad plumbing.

Washington alley.—Nos. 36, 34, 32: Entrance in 36. There are 50 rooms in these basements. The average size of rooms is 6½ by 6½ by 7 feet. No light or ventilation. No. 4: Basement filled with ducks; no ventilation.

Pacific street.—No. 636½: The old wooden shacks in the rear should be removed and the cellar filled up. No. 702: The cellar should be torn out and asphalt floor laid, otherwise it is not fit for habitation. No. 736: Totally unfit for human habitation. No. 740 to 742 inclusive: Fit for carpenter shop and such work, but not fit for human habitation.

Stockton street.—Nos. 1107 to 1117: All have a lot of filthy wooden shacks to every house, and while the places themselves are fair, these shacks are unfit for human residence.

All of these buildings were inpected by my assistant surgeons, and subsequently reinspected by me. I have quoted with regard to each building the exact language of the assistant surgeon in making his report to me. I believe that this language is not only fully justified but, in most instances, more than justified.

I have an additional list of houses which closely approximate in bad quality those which I furnish you, and there is no doubt that the owners should be forced to make extensive alterations and repairs before they are used for human habitation.

I would call your attention to the lower tier of habitations on each side of Doncomb alley as being utterly unfit, without any exception, for habitation, and I do not believe they can be made fit except by ripping out every single partition and putting in original condition before occupancy by the Chinese.

These houses will all be gone over by a member of the State board, a member of the city board, and myself next week, and I believe that this committee will concur in my findings.

Respectfully,

J. H. White,
Surgeon, M. H. S.

Dr. A. A. D'Ancona,
1022 Sutter street, San Francisco, Cal.

On June 6 I had a conference with Drs. Hill and Matthews of the State board of health, which conference was really brought about by Mr. Winfred Pearson, heretofore mentioned, who insisted that Drs. Hill and Matthews, if they believed that they were being unfairly treated by me, should present themselves at my office and so state. They did so, and I compelled Dr. Matthews to admit that I had fulfilled every single obligation resting upon me in any manner whatsoever, and had even extended courtesies, which courtesies were not a part of the agreement, and the only excuse he could make for his attitude toward me was that I had declined to take a drink with him.

They agreed to recommend to the governor certain measures which I believed to be necessary for the eradication of plague, and for the removal of all quarantines against the State of California, and upon this agreement with Drs. Hill and Matthews I wrote the subjoined letter to the governor of California under date of June 7. To this letter Governor Gage made answer on June 10. The answer, which is appended hereto, was received by me at Sacramento, en route to Washington.

On June 7 I also addressed to President J. M. Williamson, of the board of health of the city and county of San Francisco, a letter making certain recommendations, his answer also being appended, and being, as may be seen, favorable.

[Telegrams.]

San Francisco, Cal., *June 7, 1901.*

His Excellency the Governor of California,
Los Angeles, Cal.

In conference with Drs. Hill and Matthews, of the State board, yesterday, and Messrs. Herrin and Williams, of your committee, I made some verbal propositions regarding the continuance of the work in Chinatown which I wish to formally repeat to you. If, when the disinfection of Chinatown is finished, the State of California will grant the Service permission to continue the autopsies, the inspection of the sick, and the right to investigate cases and places within the State in its own way and to properly disinfect all premises if cases should subsequently be found, I believe I can have the quarantine against California by Texas and Colorado raised; but without the right to carry on the above investigations you can readily understand that it will be impossible for me to certify to the health authorities of these States that there is no danger of cases occurring, because all the avenues of infection have not been controlled. It is to be understood, of course, that these will be my personal recommendations to the Bureau in Washington, and with them I should like to present your reply. Accordingly, I should appreciate an answer by Sunday evening, as I contemplate an immediate trip to Washington.

J. H. WHITE, *Surgeon, M. H. S.*

[Letter.]

SAN FRANCISCO, CAL., *June 7, 1901.*

WM. F. HERRIN, Esq., *San Francisco, Cal.*

MY DEAR MR. HERRIN: Referring to our conversation of to-day, I would say that I am very anxious to get the quarantine raised by other States, and if the following will assure the governor of my good feeling in the matter, you may quote me thus:

Am willing to have State agent accompany my agent investigating outside San Francisco. Only want independent bacteriological study when such is needed.

Finally, will you kindly endeavor to obtain an early answer to me from Governor Gage, as I wish to leave Sunday, or certainly Monday morning, arrange matters east, and return.

Yours, very truly, J. H. WHITE, *Surgeon, M. H. S.*

SAN FRANCISCO, CAL., *June 7, 1901.*

DEAR DOCTOR: I wish to ask the formal assent of your board to the following proposition:

In order to enable me to accomplish the removal of the quarantine restrictions against the State of California by other States, I desire the privilege to be granted to the Marine-Hospital Service to inspect for a period of several months all the sick and dead in Chinatown, and make such autopsies as are deemed necessary to establish the cause of death, but these autopsies will only be made in cases where there is a reasonable suspicion entertained that the death may have been from plague. In other words, we desire to continue the practice in a less degree which we are already carrying out through your courtesy and with your cooperation until such time as we may be satisfied that there is no longer any necessity for such examinations.

I beg that you will give this matter your most careful and prompt consideration.

Yours, very truly,

J. H. WHITE, *Surgeon, M. H. S.*

Dr. J. H. WILLIAMSON,
President Board of Health, City and County of San Francisco,
San Francisco, Cal.

[Telegrams.]

SAN FRANCISCO, *June 10, 1901.*

Dr. J. H. WHITE,
Care Conductor Train No. 2, Sacramento, Cal.:

Following message from Gage: "Your appreciated dispatch 7th received. Have received no report from you on joint work San Francisco. After perusing that will be most happy to go over subjects embraced in your last message, with a view to a most friendly adjustment of all matters in which we are interested."

BLUE.

SACRAMENTO, CAL., *June 10, 1901.*

His Excellency Governor GAGE, *Los Angeles, Cal.:*

En route to Washington for conference, your telegram reaching me Sacramento. Contents much appreciated. Will report same with great pleasure to Department. Feel I am expressing wishes of Service as well as my own in hoping for an amicable adjustment. Will wire fully all points from Washington.

J. H. WHITE, *Surgeon, M. H. S.*

[Letter.]

DEPARTMENT PUBLIC HEALTH, OFFICE BOARD OF HEALTH,
San Francisco, Cal., June 13, 1901.

DEAR SIR: At a special meeting of the board of health held June 12, 1901, the request conveyed in your recent communication was considered and granted.

It is the desire of the board to extend to you every facility for the conduct of your work of investigation. I suggest that you arrange, as soon as convenient, for a conference with this board, or its representatives, in which the conditions of your future work may be arranged.

I remain, very respectfully, yours,

JAMES A. EMERY, *Secretary.*

Dr. J. H. WHITE,
Surgeon, Marine-Hospital Service, Washington, D. C.

The foregoing sums up the situation as it existed in San Francisco the first week in June, when I took my departure for Washington in the full belief that I should return to San Francisco for the further pursuit of the work to be done.

It is desirable, and in my opinion necessary, that a searching investigation should be made in the Chinese districts of every town and village in the Sacramento and San Joaquin valleys, for the evidence seems to me conclusive that San Francisco has been secondarily infected from some outside point which she had herself primarily infected, and that she will continue to receive infection from these valleys until this is done and any cases found are carefully followed up and the infection eradicated.

In conclusion, it is proper to give a summary of the work done under this agreement in Chinatown, and although this work was completed on the 21st of June, nearly two weeks subsequent to my departure from San Francisco, I will include in this report the totals accomplished and reported by P. A. Surg. Rupert Blue to me.

The district bounded north by Broadway, east by Kearny street, south by Bush street, west by Powell street, and commonly known as "Chinatown," San Francisco, was cleansed in a more effectual manner than it probably had ever been before. Every house in this district, except those inhabited by the wealthy, and consequently cleanly and highly intelligent Chinamen, was washed clean from garret to cellar with solution of caustic potash, followed by spraying with bichloride solution, the household goods being removed and aired from one to three days, and the rooms then either reoccupied as they were, or if dark whitewashed thoroughly. This latter treatment was applied to all cellars and basements.

Houses where actual cases of plague had occurred at any time within the year were given not only this treatment, but a 5 per cent volume 24-hour exposure to sulphur dioxide, and in some cases where plague had occurred in cellars contiguous to silk warehouses formaldehyde was generated by autoclaves and a 6 per cent volume 24-hour exposure applied. These methods were applied to 1,180 houses and 14,117 rooms.

In dealing with persons great care was taken not to offend the susceptibilities of the Chinese, and toward the latter part of the time only such corpses were necropsied as presented suspicious indications.

In carrying out this portion of the work the city board of health had removed from Chinatown and destroyed by fire many hundreds of tons of garbage, and because of the colossal magnitude of this work and the almost incredible amount of filth removed from this district I regret that I am unable to give the exact quantity of garbage so removed and destroyed.

I desire to make acknowledgment of the very loyal and faithful performance of duty on the part of all the officers who assisted me in this work, all of them, without any exception, showing devotion to duty and deserving high praise.

Respectfully, yours, J. H. WHITE,
Surgeon, M. H. S.

The SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

SMALLPOX IN THE UNITED STATES.

As shown in a previous portion of this report, under the head of "Division of sanitary reports and statistics," smallpox prevailed during the fiscal year ended June 30, 1901, in every State and Territory in the United States except one, and, in pursuance of the plan begun in the report for 1899, the following statement is inserted, showing the number of cases and deaths for each year from and including 1895:

Summary of prevalence, 1895–1901.

1895.—November 1, 1894, to November 1, 1895 (twelve months), smallpox reported in 27 States, 2 Territories, and District of Columbia. Total, 3,347 cases and 633 deaths.

1896.—November 1, 1895, to November 1, 1896 (twelve months), smallpox reported in 21 States and 1 Territory. Total, 1,903 cases and 360 deaths.

1897.—November 1, 1896, to November 1, 1897 (twelve months), smallpox reported in 16 States and 1 Territory. Total, 371 cases and 33 deaths.

1898.—November 1, 1897, to October 1, 1898 (eleven months), smallpox reported in 23 States, 1 Territory, and District of Columbia. Total, 2,641 cases and 27 deaths.

1899.—October 1, 1898, to November 1, 1899 (thirteen months), smallpox reported in 37 States, 4 Territories, District of Columbia, and Porto Rico. Total, 10,388 cases and 457 deaths.

1900.—November 1, 1899, to November 1, 1900 (twelve months), smallpox reported in 40 States, 3 Territories, District of Columbia, and Porto Rico. Total, 18,507 cases and 812 deaths.

1901.—November 1, 1900, to November 1, 1901 (twelve months), smallpox reported in 45 States, 3 Territories, and District of Columbia. Total, 47,243 cases and 1,037 deaths.

The decreased mortality, as shown in the above statement, is probably explainable on the grounds that the number of cases was more fully reported during the year just ended, while in the previous year it is probable that deaths alone were reported with a fair amount of accuracy, mild cases having escaped notice altogether or having been reported as other diseases. Looked at from this standpoint, therefore, it is apparent that the lower percentage of 2.19+ shown in the year just ended is really nearer the correct mortality than that of 4.38+ shown in the preceding year.

ASSISTANCE RENDERED STATE AND LOCAL HEALTH AUTHORITIES.

The Service has continued, as in the past, to render assistance to State and local boards of health by furnishing advice and publications and by detailing officers to make investigations and to assist the State authorities in putting into execution all proper regulations, and it is confidently believed that these measures have resulted in much good and have enabled communities who, on account of not having handled any cases of smallpox for many years, were not conversant with the proper management of the same, to become familiar therewith and to be able to carry out properly such sanitary regulations as are necessary to eradicate the disease, and it may be that this itself in part accounts for the decreased mortality and the increased number of cases reported.

In view of the unusual prevalence of smallpox throughout the United States, two pamphlets relating to its conveyance, prevention, and suppression, which were prepared by officers of the Service, were mailed to health officers and other interested persons in towns where smallpox was reported to exist, and these pamphlets were, in the aggregate, sent to 2,100 towns, scattered through every State and Territory of the United States except one.

Smallpox in Alaska.

The detail of officers made last year to Cape Nome and Dutch Harbor under authority of an Executive order was renewed this year, and in the spring of 1901 an officer was sent to make a careful investigation of smallpox conditions in southeastern Alaska. His report, which is appended hereto, shows a widespread dissemination of smallpox in that region.

REPORT OF OFFICER DETAILED TO INVESTIGATE SMALLPOX IN ALASKA.

Marine-Hospital Service,
Port Townsend, Wash., July 2, 1901.

Sir: In regard to my trip to Alaska on account of smallpox, I have the honor to make the following report:

It seems that the disease first made its appearance at Saxman, an Indian village about 2 miles from Ketchikan. It was not, nor is it now, thought by some to be smallpox, but it was recognized as a contagious disease, and Ketchikan sent a physician to Saxman, who treated and bathed the patients, killed all the dogs, and fumigated the houses with sulphur as well as possible. The epidemic started in December, and altogether there were about 80 cases, a majority of the inhabitants being affected. Those who did not contract smallpox were vaccinated. The individual with most authority at Saxman is an Indian missionary, a very intelligent man, and I explained to him what to do in case of a reappearance of the disease and told him to notify the Marine-Hospital Service immediately. It must be remembered that Saxman is not in any way connected with Ketchikan and that there are no authorities; that therefore in case of another outbreak it would be one of the places where the Government should take entire charge of suppressing it.

At Ketchikan there have been a few cases (at none of the smaller places have I been able to get the correct number), two of which were in the latter stages while I was there. These two cases were isolated in their houses and no one allowed to see them, and sulphur will be used as a disinfectant.

I had a talk with the mayor, a representative of the council, and the city physician; explained to them what should be done, and they said that they were willing to take charge of the Indian settlement within their city limits and would do what was in their power to cooperate with the Government in stamping out the epidemic. The city physician had made a number of vaccinations, but told me the points he secured were old and unreliable, and I left him 100 of those I brought. He had already vaccinated some 30 Indians before I left.

An Indian left Saxman for Sitka, where he expected to be married, and while there developed a very distinct form of the disease, and thus communicated it to many of the native inhabitants of that place. I saw this man, and he had entirely recovered, but was distinctly pockmarked, also a number of others showing marked evidence of having had the disease. I inclose photographs of one of the Sitka cases taken by the local photographer. Altogether at Sitka there were some 70 cases, about 24 of which were isolated on Japonski Island; 30 occurred in the mission hospital, and others in the village having it, leaving with their families, as they often do, to visit friends in other places. This migratory habit has been the means of spreading the disease and makes it very difficult to isolate them properly. A whole family, with all its belongings, will be at Sitka to-day and in a few days at Killisnoo, Hoonah, or any other place where there is a native village. I might say also that this is a poor time of year to do much vaccinating among the Indians, as they are scattered all over, fishing and shooting for their winter's supply of food.

At Sitka there was a dispute over the diagnosis at first, but finally a step was taken in the right direction and an effort made toward disinfection and isolation. As I said before, about 24 cases were isolated on Japonski Island, and the houses they occupied while there were burned, together with their clothes and bedding. All the houses in the village were disinfected whether they had contained smallpox or not, and a thorough vaccination was made, which was very successful. The method used for disinfection I am not familiar with, and I am not sure of its efficiency, although if the compounds were used in sufficient amounts I have no doubt that the chlorine gas evolved would act well in destroying germ life. The following chemicals were used: Sodium chloride, manganese dioxide, and sulphuric acid.

I addressed the board of trade telling them of the importance of a thorough disinfection, the proper methods to be employed, and the necessity of having a board of health, or at least a health commissioner, who could supervise such matters on all occasions. It must be remembered that there is no organization in this town; no one seems to have any authority, and I therefore include it among the Alaskan towns where it might be necessary for the Government to take a hand in case of further trouble. At present there are no cases. One Russian was attacked by the disease, and his house was disinfected with sulphur; in a few other instances formaline was used in the form of the tablet.

At Juneau I found there had been 1 case, an Indian, who was immediately isolated on Douglas Island, and the house thoroughly disinfected by Acting Assistant Surgeon Leonhardt. At Douglas City there have been 8 cases among the Indians, all isolated on Douglas Island and all precautions taken. One case escaped from quarantine and attempted to go to Sumdum. There the natives would not allow him admittance to their houses, and he encamped on the beach some distance away and then left for other parts. This Indian is only one in many who have wandered about and been the means of carrying contagion.

There has been no smallpox at Sumdum, and Dr. Leonhardt will see that the few natives there are vaccinated. At Skagway there is no Indian village, but there have been 4 cases among the whites; these no doubt became infected while at Seattle, Wash. The first case developed the disease a few days after leaving the steamer, and another was in quarantine at Port Townsend, Wash., with the steamer *Senator;* but as a month had elapsed from that time to the onset of the disease, it is not probable that they were contaminated during their stay aboard that vessel; the remaining 2 cases were infected at the same time as the latter case. At Skagway it is most important that the authorities have the situation well in hand, as the Canadian officials are fearful that the disease may be taken across the border, and I think that City Physician Moore, of Skagway, is doing everything that can be done.

At Killisnoo the Alaska Oil and Guano Company have a plant where they manufacture fish oil and guano, but outside of this there are no white people; there is however, a large Indian village, and smallpox has been very prevalent among its inhabitants. I have seen some half dozen cases, all mild, and there are many others who have gone into isolation of their own accord some distance from the village. Some weeks ago a physician came here and vaccinated some of the natives and I vaccinated some 60 more, and I believe that at present all those who have not gone away on their customary summer excursion have been vaccinated successfully. There are no hotel accommodations here, but I was taken care of through the courtesy of Mr. Spoon, the manager of the company. There is, or was, smallpox at Hoonah, Angoon, Cholmondely, and other small Indian settlements, but as these places are out of the ordinary routes of travel I was not able to pay them a visit. They are purely Indian villages, and therefore there are no white authorities to take the necessary steps towards overcoming the present epidemic and prevent its reappearance in the winter. At Hoonah the Indians are afraid to return, and asked the commander of the U. S. S. *Patterson* to do something to their houses that it might be safe to reenter them, and I will report further on that it is absolutely necessary for the Government to take entire charge of this matter. Even at a few of the white settlements where there is some organization I fear that even though they can be made to believe that it is necessary for them to go down in their pockets and buy chemicals to disinfect Indian houses, it will then only be done in a half-hearted, inefficient way. Therefore I respectfully recommend that the Bureau take entire charge of the disinfection of these Indian settlements, which are not connected with any incorporated cities.

On account of the very unsatisfactory means of communication between many of the places and the inability to get accommodations, it will be necessary to have a vessel at one's command. At Sitka I waited for the U. S. revenue steamer *Rush*, hoping that I might get her assistance in transporting me from place to place in order to carry out fully the Bureau's directions, but upon her arrival learned that Captain Killgore, although willing to assist, had orders to take the court to Valdes; therefore was unable to help me in any way at that time. There are some fifty places to visit, including canneries. Some of these, where there had been sickness, would have to be disinfected, while in others a thorough vaccination of the Indians would be sufficient. I think that with a vessel at the disposal of the Marine-Hospital Service, with one commissioned officer, an assistant, an interpreter, and twelve attendants, it would be possible to accomplish as much as the circumstances and conditions of the country would allow. A supply of disinfectants should be taken, a stop made at each village, and every house fumigated, as well as bedding and clothing; the houses could be disinfected even though the natives were absent. This would not be an easy task, as the houses are poorly constructed, being full of cracks and knot holes, and many of them having a large hole in the roof to allow the smoke to escape. Four or five families are sheltered under one roof and they make no attempt to keep their houses in a cleanly condition. While going from place to place all temporary Indian encampments and canneries could be visited and those Indians not having had the disease, or not showing signs of a successful vaccination, could be vaccinated, for, as I said before, they are at present scattered about the country, and this would be the only way to reach them during the summer. Knowing that Captain Killgore would stop at many of these points while cruising about, I left him 1,000 vaccine tubes to be used among the natives. The formation of detention camps for the exposed would be impracticable, but sick Indians could be isolated, as in many instances of their own will, while sick with smallpox, they will leave the village and camp somewhere in its vicinity. I think by carrying out this plan, while not entirely satisfactory, a great deal could be done toward preventing the further spread of the disease.

It is possible that before further action can be taken all those Indians who are susceptible will have had smallpox and thus the disease will be in a way stamped out, but the houses and clothing will remain a menace to all white people visiting them. However, I will be very much surprised if, owing to the difficulty of getting at all of the Indians at the present time, and the equally difficult task of thoroughly fumigating all the houses, even though the disease should die out this summer and even though such active measures as practicable be taken to suppress it, it does not reappear some time during the winter when the Indians have returned to their quarters. For that reason I would respectfully recommend that an officer of the Service be allowed to remain in Alaska for a time, and in November after the Indians return from their summer's work a thorough inspection be made of all the native villages, not only to vaccinate those who have been overlooked, but to discover the first sign of a new outbreak and be able to take immediate action.

Having been on the ground and seen the difficulties one has to contend with, I have made the foregoing suggestions, believing them to be the best means of accomplishing anything in a country like this, where the conditions are so different from those in the States.

At the important towns Indian curios and furs are being disinfected by the local authorities, and at no places will such things be allowed aboard a vessel without a certificate signed by the proper person showing that they have been disinfected. At the largest cities, Juneau and Skagway, vessels are inspected before passengers are admitted to the city. Vaccination has been practiced by the local authorities at Sitka, Skagway, Juneau, Douglas City, and Ketchikan, and there has also been a certain amount of vaccination done by visiting physicians at many of the smaller places, but there must be a great many natives who have as yet not been subjected to the operation.

Respectfully,

CARROLL FOX,
Assistant Surgeon, M. H. S.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

AID RENDERED BY THE REVENUE-CUTTER SERVICE.

Much assistance was rendered by the Revenue Cutter Service, not only in transporting the officers of the Service, but through their own medical officers in giving advice and assistance to stricken communities wherever it was possible for them to do so, and it is to be regretted that on account of vessels being needed for other work it was impossible for the Revenue-Cutter Service to render the further and other important assistance which was recommended in the latter part of Assistant Surgeon Fox's letter.

YELLOW FEVER.

There has been no yellow fever in the United States since the last annual report, and, with the exception of a few cases that were reported in Natchez in November of last year, there have been no cases in this country since the fall of 1899. Reports have been received of the existence of yellow fever in Brazil, Colombia, Costa Rica, Cuba, France (on a steamship at Havre), Haiti, Jamaica, Mexico, Salvador, San Domingo, and West Africa. Brazil, Cuba, and Mexico furnished a very large majority of the cases. In Cuba, from July 1 to December 31, 1900, there were 1,279 cases, with 298 deaths, a mortality of 23.3 per cent; from January 1 to June 30, 1901, 114 cases, with 30 deaths, a mortality of 26.3 per cent.

PROPOSED PLAN FOR INTERNATIONAL AGREEMENT OF AMERICAN REPUBLICS.

The plan of an international agreement of the American Republics for the sanitation of certain seacoast cities, with a view to the elimination of yellow fever, which has been referred to in two former reports, has progressed so far that, by invitation, a plan was submitted by the Surgeon-General to the chairman of the United States delegation for presentation to the conference of American States which convened in the city of Mexico October 22, 1901.

YELLOW-FEVER INSTITUTE.

Recognizing the importance of arriving at full and definite conclusions in regard to all questions concerning yellow fever, its etiology, epidemic history, method of spread, and the effect of these conclusions on quarantine and quarantine regulations, the establishment by the Service of a yellow-fever institute was determined upon, and a letter was addressed to the honorable the Secretary of the Treasury September 13, 1901, and received Department approval September 25, 1901, explaining the object of such an institute and inclosing a plan of organization for the same. Following is the letter and inclosure:

[Letter.]

TREASURY DEPARTMENT,
OFFICE OF SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., September 13, 1901.

The SECRETARY OF THE TREASURY:

SIR: I have to invite your attention to the subject of yellow fever, and to the discussions which have been published in the medical journals and in the daily press during the past few months regarding its transmission. The subject is one with which the U. S. Marine-Hospital Service, through legal responsibility, has been intimately associated since its reorganization in 1871, the publications of this Service being the chief repository of the statistics and other facts pertaining to this disease. The annual reports are largely devoted to this subject. In 1889 a volume was published entitled "Yellow fever, its nature, diagnosis, treatment, and prophylaxis, and quarantine regulations relating thereto," consisting of contributions by medical officers intimately acquainted with the disease, either by scientific or clinical work. A volume was published in the same year containing a report of a commission of medical officers detailed by authority of the President to investigate the cause of yellow fever. The Service, through its national quarantine stations and cooperation with State and local stations, has many times prevented the introduction and, by its detention camps, the spread of the disease.

Within the last year a medical commission of the U. S. Army, operating in Cuba, has made a report, showing that the mosquito conveys yellow fever and declaring that this is the only method by which the disease is conveyed to man and that it is a particular species of mosquito only which thus transmits it. In their conclusions it is stated that the cause of the disease is unknown. Based upon their findings, demands have already been made upon the Bureau for certain modifications of the quarantine regulations, which, for the present season, the Bureau, with its deemed justifiable conservatism, has declined to make, but the matter will undoubtedly again be urged during the next season, and it is incumbent upon the Bureau to have definite scientific grounds upon which either to modify its present regulations or to maintain them. On the one hand, the Bureau has no desire to perform unnecessary labor, nor to impose unnecessary restrictions upon commerce, its traditional policy being to maintain a scientific quarantine and to impose no restraints upon travel or commerce not demanded in the light of science and experience. On the other hand, the Bureau can not, in the interest of commerce, remove time-honored measures without definite justification therefor.

Since the announcement of the findings of the above-mentioned army commission, the Service has continued the prosecution of its inquiries concerning this disease, with special reference to the findings of this commission. This has been done not only in the hygienic laboratory, but by special orders transmitted to the officers assigned in April to the several fruit ports of Central America, to the medical officers in Cuba and Porto Rico, and to those at the Southern quarantine stations of the United States. A number of reports have been received and published in the Public Health Reports containing facts of interest on the subject. To estimate these facts at their full value, to collect additional facts, and to give direction to future investigation it has become necessary to devise a plan for a complete study of the subject in all its phases. This duty is incumbent on the U. S. Marine-Hospital Service by reason of the quarantine law ot 1893, which provides for making the necessary quarantine regulations against the disease.

Section 4 of this law also requires—

"That the Secretary of the Treasury shall also obtain, through all sources accessible, including State and municipal sanitary authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall prepare, publish, and transmit to collectors of customs and to State and municipal health officers and other sanitarians weekly abstracts of the consular sanitary reports and other pertinent information received by him, and shall also, as far as he may be able, by means of the voluntary cooperation of State and municipal authorities, of public associations, and private persons, procure information relating to the climatic and other conditions affecting the public health." * * *

That public-health work of this character is incumbent upon the Service is further shown by the act of Congress approved March 3, 1901, in which an appropriation is made for a new building for hygienic laboratory, U. S. Marine-Hospital Service, the function of this laboratory, as stated in the law, being for the investigation, under the Surgeon-General, of contagious diseases and matters relating to the public health.

Moreover, Congress has provided a fund for the prevention of epidemic diseases which may well be applied to this investigation, as there is no epidemic disease of greater importance as affecting the United States than this one.

In view of the foregoing facts, I have prepared and submit herewith a plan for the organization of a yellow-fever institute in the U. S. Marine-Hospital Service, whose object will be to collect all facts concerning yellow fever, to designate the specific lines of investigation to be made, and to make the investigations. The members of this institute are to be the medical officers of the U. S. Marine-Hospital Service, and others specially qualified. They will be assigned for duty to one of four sections, each section having a special list of topics for consideration. Each of the four sections will be under the direction of one of the medical officers on duty in this Bureau, and said Bureau officers, with the director of the hygienic laboratory, the Surgeon-General, and a secretary, will constitute an executive board, which is to have general oversight of all the investigations. This furnishes a convenient method of administration, as the machinery of the institute will be readily operated in the Bureau, while the actual work will be carried on by members at various places.

At present the Service work on yellow fever is being conducted by a limited number of officers, working on more or less independent lines. The institute provides for observation and experiment by a large number of workers in accordance with a general system—in fact, organizing and coordinating the work that has been going on and which is to be done.

The stimulus to the members will be not only the scientific interest in the subject, but the publication of their contributions in the shape of bulletins as often as it seems advisable to the board; and with the Department facilities and necessary funds for incidental expenses it is believed that the organization will meet with a degree of success warranting its existence.

To illustrate the workings of the commission, in addition to the scheme of organization there is inclosed a series of topics proposed for investigation in each of the four sections.

Respectfully,

WALTER WYMAN,
Surgeon-General U. S. M. H. S.

Approved, September 25, 1901:
O. L. SPAULDING, *Acting Secretary.*

[Inclosure.]

ORGANIZATION—YELLOW-FEVER INSTITUTE—U. S. MARINE-HOSPITAL SERVICE.

OBJECT.

The object of the institute is to collect all facts concerning yellow fever, to designate the specific lines of inquiries to be made, and to make them.

OFFICERS.

The Surgeon-General of the U. S. Marine-Hospital Service, ex officio chairman of the institute; secretary, the medical officer in charge of the Bureau division of scientific research.

An executive board to consist of the chairman and secretary, the director of the hygienic laboratory, and the medical officers in charge of the following Bureau divisions, viz: Division of domestic quarantine, division of foreign quarantine, and division of sanitary reports and statistics.

DUTIES OF THE EXECUTIVE BOARD.

To direct the investigations, correlate the reports, and supervise publications.

MEMBERS.

Every medical officer of the U. S. Marine-Hospital Service and others specially qualified.

SECTIONS.

Section A. History and statistics.
Section B. Etiology.
Section C. Transmission.
Section D. Quarantine and treatment.

Each section will be presided over by a member of the executive board. The chairman of each section will organize the work of the section, subject to the approval of the executive board. He shall direct operations and receive and classify its reports.

Members of the institute will be assigned to the class or classes for which they express a preference. These assignments, so far as medical officers of the U. S. Marine-Hospital Service are concerned, will be made with the approval of the Surgeon-General, and their duties under the direction of the section chairman shall not conflict with the regular duties and regulations of the U. S. Marine-Hospital Service.

Publication of the reports received from members will be made from time to time, as determined upon by the executive board.

SECTION A.—HISTORY AND STATISTICS.

[Chairman of section, surgeon in charge of Bureau division of sanitary reports and statistics.]

TOPICS.

Topic 1. The early history of the disease.
Topic 2. Relation to the slave trade.
Topic 3. History of recent epidemics (since 1850).
Topic 4. Relation to modern sanitation, especially paving, drainage, etc., in cities.
Topic 5. Why did not New Orleans have it in early times, while Boston did?
Topic 6. Mortality statistics.
Topic 7. Maps showing yellow-fever zones.
Topic 8. Maps showing the infectible territory in the United States.

SECTION B.—ETIOLOGY.

[Chairman of section, the director of the hygienic laboratory.]

TOPIC.

Topic 1. The cause of the disease.

SECTION C.—TRANSMISSION.

[Chairman of section, surgeon in charge of Bureau division of domestic quarantine.]

TOPICS.

Topic 1. The transmission of the disease by the mosquito.
Topic 2. Can any other mosquito than the *Stegomyia fasciata* carry the infection?
Topic 3. Is the progeny of the mosquito also infected?
Topic 4. How many generations?
Topic 5. Can the mosquito become infected by any other means than by sucking the blood of a patient sick with the disease?
Topic 6. Can the mosquito become infected by contact with the dried blood discharges or other infected materials upon fomites?
Topic 7. Can the disease be transmitted by any other means than through the mosquito?
Topic 8. Can the disease be conveyed by fomites, or through the air, soil, or water?
Topic 9. The geographical distribution of *Stegomyia fasciata* in relation to the disease.
Topic 10. Is the immunity enjoyed by certain localities due to the absence of this variety of mosquito?
Topic 11. A study of the life and habits of the *Stegomyia* and allied species, especially with a view to their extermination.

SECTION D.—QUARANTINE AND TREATMENT.

[Chairman of section, surgeon in charge of Bureau division of foreign quarantine.]

TOPICS.

Topic 1. Is disinfection of baggage necessary to prevent the spread of the disease?
Topic 2. Is any treatment of baggage necessary?
Topic 3. Mosquitoes in baggage, in merchandise, in cars, in ships.
Topic 4. Treatment of the patient.
Topic 5. Guards against mosquito bites.
Topic 6. Immunity of individuals, of races.
Topic 7. Individual prophylaxis.
Topic 8. Communal prophylaxis—sanitation.

HYGIENIC LABORATORY.

REPORT OF THE HYGIENIC LABORATORY.

By M. J. Rosenau,

Passed Assistant Surgeon, and Director of the Hygienic Laboratory, U. S. Marine-Hospital Service.

The director of the laboratory was absent during the first half of the year on foreign detail. During this time P. A. Surg. H. D. Geddings, Marine-Hospital Service, was acting director, and the results of the work of the laboratory during that time are included in this report.

Assistants in the Laboratory—Class Work.

Asst. Surg. Donald H. Currie, Marine-Hospital Service, completed the course of instruction planned for him, and when detailed to proceed to San Francisco in order to make the bacteriological diagnoses of plague, was fully equipped and competent for that duty. While in the laboratory he made special studies with the *bacillus pestis* and the *bacillus icteroides*, and his report upon the latter subject is submitted in the Appendix.

Asst. Surg. John D. Long also did admirable work while stationed in the laboratory, and his course of instruction, lasting about six months, included all the important topics in bacteriology.

P. A. Surg. Joseph B. Greene was detailed to the laboratory for a short time this spring to make studies of mosquitoes in the District of Columbia, and Asst. Surg. S. B. Grubbs was detailed to the laboratory on May 9 in order to carry on original work as well as to assist in the laboratory. He is now occupied with an investigation of the colon and typhoid organisms, especially the methods of isolating the latter from polluted water.

Both Dr. Currie and Dr. Long completed the course in pathology and bacteriology as outlined in the following brief summary:

LABORATORY COURSE IN PATHOLOGY AND BACTERIOLOGY.

Media: Bouillon. Sugar-free bouillon. Glucose and lactose bouillon. Dunham's solution. Agar-agar. Gelatine. Potato. Loeffler's blood serum. Milk. Litmus milk.

2. Care and use of instruments and apparatus. Principles and practice of sterilization. Steam and dry heat. Use of formaldehyde lamp, autoclave, and steam chamber. Use and care of microscope and accessories.

3. Stains: Loeffler's methylene blue. Carbol-fuchsin. Gentian violet. Thionin, Gram's solution, eosin and Meyer's hæm-alum, Ehrlich-Biondi triacid stain.

4. Study of bacteria: Morphology, unstained and stained, in hanging drop. Motility, multiplication, spores. Cocci. Bacilli. Spirilla. Molds. Sarcinæ. Colonies. Brownian movement. Staining and decolorization. Special staining. Tubercle. Leprosy. Gonococci. Staining bacteria in tissue.

5. Fixing, imbedding, mounting, staining of tissues.

6. Sterilization and disinfection: Vessels and apparatus, glassware, media, and wastes.

7. Bacteriological technique: Inoculation of media, agar and gelatin. Petri plates. Esmarch rolls. Koch's plates. Technique of anaerobic culture. Deep stabs. Pyrogallic acid. Novy's jars. Growth in hydrogen. Fraenkel's method.

8. Glass blowing: Pipettes. Bulbs. Test tubes, sealing and opening same. Welding tubes.

9. Study of saprophytes: B. subtillis. B. proteus. Molds. Yeasts. B. megatherium. Sarcine lutea.

10. Coli communis.

11. Toxins: Filtration. Precipitation, $MgSO_4$, $(NH_4)_2SO_4$, Lustig's method.

12. Animal inoculations with B. coli communis and its toxins.

13 Pathogenic bacteria: Anthrax. Diphtheria. Study of swabs and cultures from throat. Staphylococci and streptococci. Typhoid. Pneumonia. Hemorrhagic-septicaemias. Chicken cholera. Mouse septicaemia. Swine plague. Typhimurium. Tuberculosis and tuberculin. Tetanus. Malignant œdema. Symptomatic anthrax. Glanders. Actinomycosis. Cholera. B. icteroides. Plague.

14. Vaccinia and vaccination.

15. Immunity and immunization.

16. Bacteriology of air, water, and soil.

YELLOW FEVER.

Studies were made with the *bacillus icteroides* of Sanarelli throughout the year. Not only was this organism investigated for its cultural and pathological characteristics, but attempts were also made to obtain remedies which might prove prophylactic and curative. A vaccine was prepared according to the methods of Haffkine for making his prophylactic against bubonic plague. For this purpose virulent cultures of the *bacillus icteroides* were grown upon agar and bouillon for various times, and the toxins thus obtained, after appropriate treatment, were tested upon rabbits, guinea pigs, and other small animals as to their preventive power against subsequent inoculations of the *bacillus icteroides*.

Attempts were also made to obtain a prophylactic or curative serum by the inoculation of the cultures and toxins of this bacillus into horses. It was found that the horses reacted severely to the injections and that, contrary to expectations, the increased doses did not seem to give them the same protection against still larger doses as we are accustomed to see with diphtheria toxin, snake venom, and many other toxins. This work also received a setback by the fact that all the horses suffered with an epizootic last summer, resembling an influenza which at that time prevailed in the District. Five of the eight horses died as a result of the injections. Death usually followed within an hour of the time an injection was given, despite the fact that the amount injected was sometimes the same or even less than that which the horse withstood a few weeks previously. At the date of writing this report the laboratory still has three horses remaining under treatment for this purpose.

The *bacillus icteroides* was also studied for its morphological and and pathological characteristics, especially in relation to its identity with the *bacillus choleræ suis*. It was found that the virulence of the cultures brought back by the commission from Habana was much diminished by the advent of cold weather. Rabbits failed to die from large injections. If the rabbits, however, were kept in a warm place similar to the heat of a West Indian summer it was found that the bacillus regained its pathogenic power. This very suggestive fact served as a basis for further studies along this line, which will be reported at a later date.

The claim having been made by certain investigators that *B. icteroides* has no specific relation to yellow fever, but is only a secondary factor in a certain per cent of cases of this disease, and that it probably also occurs in the blood of patients suffering from other diseases, such as typhoid fever, etc., an investigation was started to determine whether this organism, or organisms belonging to the paracolon group and resembling it, could be found in the blood or upon the skin of patients suffering from the diseases prevailing in this latitude. In all, the blood of 24 patients ill with the following diseases was examined:

	Cases.
Typhoid fever	12
Tuberculosis	4
Croupous pneumonia	2
Post-operative fever	2
Malaria	1
Transverse myelitis	1
Inguinal adenitis	1
Pleurisy	1

These diseases, it is believed, fairly represent the average febrile cases that enter a general hospital in this latitude during the autumn season. In none of these was the *bacillus icteroides* found or any member of the paracolon group in the least way resembling the *bacillus icteroides*. It therefore seems that those who hold to the theory that the *bacillus icteroides* is only a secondary invader have yet to explain the interesting fact, namely, why it does not invade the blood of man in other febrile diseases than yellow fever. The interesting report upon this particular investigation is submitted as Appendix No. 1 and entitled "A report of the results obtained in the search for the *bacillus icteroides* in the blood of patients suffering from diseases other than yellow fever in the District of Columbia," by Asst. Surg. Donald H. Currie, Marine-Hospital Service.

As soon as the army commission announced their results concerning the relation of the mosquito to the transmission of yellow fever, studies were set on foot to confirm their results which have such an important bearing upon quarantine practice and the management and suppression of this much dreaded yellow plague. These investigations first required a study of the mosquito itself, especially the *Culex fasciatus* or *stegomyia*, which is the particular variety of mosquito accused of transmitting the disease from the patient to the well. Specimens were obtained from Habana, Rio de Janeiro, New Orleans, South Atlantic Quarantine Station, and other sources. The *Culex fasciatus* is not found in the District of Columbia.

Experiments were conducted by exposing these mosquitoes to virulent cultures of *B. icteroides* upon potato and other media. After the mosquitoes had fed upon the cultures and after a lapse of several days they were allowed to bite animals. These experiments, which are now in progress, will be reported upon in detail at a future time.

The army commission stated its belief that the cause of yellow fever is probably a protozoon similar to that of malaria, and in view of this assertion the most important point in clearing up the etiology of the disease is the search for this supposed parasite in the blood of patients and in the bodies of mosquitoes that have sucked such blood.

The question whether fomites can convey the disease is one of vital importance from a sanitary and epidemiological standpoint. It is important now to solve the query whether the mosquito can become infected from the fresh and dried discharges of the patient. These and other questions are engaging our attention.

I have the honor again to recommend that a yellow-fever commission be detailed for scientific work with the disease in Cuba, Central America, Rio de Janeiro, or other places where it exists, as well as to study malarial fever, dengue, and the anomalous fevers of the south.

Insects as Factors in the Conveyance of Disease.

The great importance of insects as factors in the conveyance of disease was early recognized by the Marine-Hospital Service, and a circular upon this subject was issued by the Surgeon-General. The relation of the mosquito in the conveyance of malaria, yellow fever, and filariasis seems definitely proven. Simond and others believe the flea to be responsible for the transmission of plague from rats to man. There can be no question that typhoid fever and cholera are spread through the agency of flies.

This is, scientifically, an entirely new subject, and the relation of insects to the conveyance of diseases needs more definite proof than simple observation or supposition. One phase of this work was therefore taken up by the hygienic laboratory, namely: Can the mosquito transmit diseases due to bacteria? In order to solve this question special cages were constructed, having two compartments, in one of which either the sick animals or infectious materials were placed, while in the other compartment fresh, healthy animals were kept. The cages are so arranged that the two sets of animals are completely isolated. Mosquitoes of different varieties are then allowed to bite the sick animals or the cultures, and after a period of time, are transferred to the compartment containing the healthy animals. These experiments are now going on with a variety of animals and three or four different kinds of infection. It is yet too early to speak of the result.

Bubonic Plague.

The subject of bubonic plague occupied a very great proportion of the time and attention of the laboratory throughout the year. Many phases of the subject were studied. Efforts were made to prepare a prophylactic and curative serum according to the method of Yersin. Many thousand doses of a vaccine known as Haffkine prophylactic were prepared and sent out to many points of our country and its insular possessions. A number of specimens from the buboes and lesions of patients were received from our quarantine stations for examination and diagnosis, and studies upon the viability of the *bacillus pestis*, which have been going on in the laboratory for more than two years, were concluded and a report made on the subject. (Laboratory Bulletin No. 4.) A paper was also prepared on the subject of the Haffkine prophylactic, antipest serum, describing the action of these two substances, comparing the one with the other, and giving the indications and contraindications for their use. (Public Health Reports, August 31, 1900.)

Three horses were treated with toxins and dead cultures of the *bacillus pestis* in order to produce the curative and prophylactic serum above mentioned. These horses were treated for about seven or eight months, at which time a serum was obtained which had certain prophylactic power, but was not of sufficient strength to be used as a curative agent. It was then found that in order to obtain a serum which had this desired strength it would be necessary to inoculate horses with living virulent germs. On account of our lack of facilities and stable arrangements this would not be a safe procedure, and by authority work was discontinued and the horses were sold by condemnation proceedings to the highest bidder, who happened to be a firm possessing the necessary facilities and isolation for carrying on this part of the work. This proved to be fortunate, for it is very desirable to have a supply of antipest serum in this country in order to be prepared for a visitation of plague, which has threatened both of our seacoasts during recent years.

In all about 100,000 doses of the Haffkine prophylactic were prepared, bottled, and issued. This vaccine was sent to San Francisco and all the ports on the Pacific coast, to the Philippine and Hawaiian islands, and many other places where plague existed or threatened. A supply sufficient for any emergency was sent to each one of the 17 national quarantine stations.

The subject of the viability of the *bacillus pestis*, to which so much attention had been given, resulted in the following conclusions:

The *bacillus pestis* is not a frail organism. It resembles the hemorrhagic septicæmic group or the coccobacilli as far as its viability is concerned.

Temperature is the most important factor in the viability of the plague bacillus. It keeps alive in the cold, under 19° C., a very long time. It dies quickly, especially when dried, at the body temperature, 37° C.

Moisture favors the life of the *bacillus pestis*. It usually dies in a few days when dry, even in the presence of albuminous matter, provided the temperature is above 30° C. It may keep alive and virulent, when dry, for months in the cold, under 19° C.

Sunlight kills the organism within a few hours, provided the sun shines directly upon the organism and the temperature in the sun is over 30° C. The effect of sunlight is not very penetrating.

The virulence of the *bacillus pestis* is often lost before its vegetability.

It is unlikely that new dry merchandise would carry the infection. The organism usually dies in a few days on the surface of objects such as wood, sawdust, bone, paper, etc.

Clothing and bedding can harbor the infection for a long time and may act as fomites. The bacillus lives for months, when dry, in albuminous media at temperatures under 20° C.

Food products may carry the infection of plague. The bacillus lives a long time in milk, cheese, and butter. It usually dies quickly on the surface of fruits and prepared foods.

The organism may live a long time in water, although plague is not a water-borne disease.

The plague bacillus does not live long on paper and first-class mail is therefore not apt to convey the infection.

The colder the climate the greater the danger of conveying the infection on fomites—clothing, bedding, food, merchandise, etc.—and more extensive disinfection is required in such a climate in combating the disease than in tropical regions.

The plague bacillus is destroyed by sulphur fumigation and by formaldehyde gas in the strengths in which these disinfectants are usually employed. The gases can only be depended upon as surface disinfectants. In disinfecting ships, warehouses, dwellings, and other places infested with rats, fleas, and vermin, sulphur is better than formaldehyde, because formaldehyde gas fails to kill the higher forms of animal life.

A temperature of 70° C. continued a short time is invariably fatal for the plague bacillus. The ordinary antiseptics are all efficacious in their usual strength for nonspore-bearing organisms. Efficient surface disinfection may be accomplished by exposing objects all day to the direct sunshine on warm days. The temperature in the sun must be above 30° C.

The subject of plague is now the most important one with which the country has to deal as far as pestilential diseases are concerned. The subject will therefore be continued as one of the principal studies in the laboratory.

Disinfection Experiments.

Many experiments were made with formaldehyde gas and other substances in order to determine their practical as well as their theoretical value as disinfectants. Various substances were submitted for determination as to their germicidal properties, and reports upon the results of these investigations were made from time to time during the year. Formaldehyde gas especially was tested, more in particular as to the best methods of its production, the necessity of the presence of moisture, its penetration, and its limitations in practical use as a disinfectant. Almost all the forms of apparatus now found on the market were given practical and theoretical tests, and the results of this investigation will be made the subject of a special report. A study upon an improved formaldehyde lamp was made by Dr. Geddings. (Public Health Reports, Oct. 19, 1900.)

FORMALDEHYDE AS AN INSECTICIDE FOR MOSQUITOES.

It is now a well-established fact that formaldehyde gas, while it has great potency in destroying the lower forms of vegetable life, has little toxic effect upon animal life. In our experiments with this gas on the smaller animals, such as rabbits, mice, rats, guinea pigs, and the like, we found that the gas, even in concentrated atmospheres, was extremely irritating to the mucous membranes, but failed to produce death in these animals after a prolonged exposure. From the results obtained in practical use it is well known that the gas, no matter by what manner it is generated, does not kill cockroaches and insects of this character infesting ships. As far as the mosquito is concerned, our experiments show that the gas has a certain insecticidal value for this insect. Our experiments were all made upon the variety known as *culex pungens*, and as far as we have gone with this work it may now be stated that an exposure of twenty-four hours is sufficient to kill the mosquitoes in a room or confined space provided the gas is used in the concentration required in actual disinfection, and provided the mosquitoes have no chinks or cracks, heavy folds of drapery, or other places where they may hide from the effects of the gas. We found that a weak atmosphere of formaldehyde gas will not kill mosquitoes in twenty-four hours.

Danyz's Virus and the Destruction of Rats.

The subject of the destruction of rats has assumed great importance within recent times on account of the spread of plague to the four quarters of the globe.

In the short time since 1894, when plague broke from its Eastern confines, where it had slumbered so many years, a great mass of exact scientific knowledge has been gathered concerning the disease. The relation of the rat to the spread of the disease has especially engaged the attention of investigators.

During the great outbreaks of plague in the middle ages the unusual mortality among the rats was noticed, and it was obvious then that these animals played some rôle in the spread of the disease. We now know definitely that the rat is susceptible to plague. This rodent sickens and dies of the disease in much the same manner as man. An epidemic may be foretold by a great increase of mortality in rats, for when this occurs it may be shown that the rats first contract the disease and afterwards transmit it to man.

The destruction of rats has, therefore, become of the first importance from the standpoint of the public health and the prevention of the spread of plague.

Plague has threatened our country from both its seacoasts, and it is probable that the only reason it has not spread in San Francisco is due to the fact that the disease has not been prevalent among the rats.

In the spring of 1900, J. Danyz described a new method for the destruction of rats by means of cultures of a certain bacillus. This bacillus he obtained from a spontaneous epidemic among harvest mice, and by means of rather complicated and artificial methods he managed to increase its virulence so that it become pathogenic for the several species of rats. The claim is made that the employment of the cultures of this bacillus, sold under the name of "Rat Virus," is efficient for the destruction of these rodents.

Work was undertaken in order to test the validity of this claim, and the results obtained follow.

The substance known as Danyz's virus consists of a culture of a bacillus belonging to the para-colon group. It appears to be identical with the *bacillus typhi murium* of Loeffler.

This organism is naturally pathogenic for mice, in which rodents it sometimes produces spontaneous epizootics. Its virulence has been raised and specialized by artificial means in the laboratory, so that it has become fatal for rats by ingestion. This artificial virulence is not very stable. It may be maintained under special conditions a few months, but the virulence is apt to fall off, especially on exposure to light and air.

As far as rats are concerned, the effect depends somewhat on the amount ingested. Large amounts are frankly fatal. Small quantities are uncertain. Rats that survive the ingestion of the virus are rendered immune. Such rats may eat large amounts of the virulent virus with impunity.

The infection caused in rats by eating the virus has feeble power of propagating itself from rat to rat. It, therefore, can not produce a widespread epizootic among these rodents. In practical use it must be spread around so that as many of the rats as possible will eat it.

In many respects it resembles a chemical poison, with this great advantage, viz, that it is harmless, in so far as known, to man and domestic animals. It has the great disadvantage, that chemical poisons do not possess, of rendering the animals immune by the ingestion of amounts that are insufficient to kill or by the ingestion of cultures that have lost a little of their virulence.

In my experiments I succeeded in killing less than half the number (46 out of 115) of rats fed. The conditions in a cage are so much more favorable for the fatal action of the virus than could possibly be the case in nature that it is safe to assert that a less number would succumb in a wild state.

The virus may, therefore, be used as one of the means in the fight against rats, but it is far from being a sure means of exterminating these rodents in a particular place.

The work is still going on at the end of the fiscal year and will be made the subject of a special report soon to be issued.

THE POLLUTION AND PURIFICATION OF WATER SUPPLIES.

This subject, which has such an important and direct bearing upon the public health, has always engaged the attention of the hygienic laboratory. The subject is a live and growing one and efforts are made to keep abreast with the many improvements and advances made along this line. A number of samples of water from various parts of the country were examined as to their potability. The examination included both bacteriological and chemical tests. Reports upon the results of these investigations were made from time to time during the year.

The importance of the subject of the pollution and purification of water supplies to large cities prompts me to renew my recommendation of last year that a commission be appointed by the Marine-Hospital Service to make a scientific inquiry upon this subject, especially in relation to rivers and streams affecting more than one State or Territory. The questions which such a commission could determine are as follows: Does a flowing stream purify itself from a bacteriological standpoint? How far can the cholera bacillus, the typhoid bacillus, and other pathogenic organisms be conveyed by flowing water and remain a menace to the health of those using such water? And a study of the best methods of purifying various kinds of polluted waters and the value of ozone and perchloride of oxygen methods which have lately been exploited for this purpose.

During the present year a paper upon the "Filtration of water supplies" was prepared by P. A. Surg. H. D. Geddings and indorsed by the Surgeon-General. This paper canvasses the relative merits of the so-called mechanical system (American) and the slow sand-filtration system (English), and is given in Appendix No. 2.

THE PORTABLE LABORATORIES OF THE SERVICE.

In the latter part of the year 1899 a proposition was submitted to the Surgeon-General to assemble two portable laboratories, which received his ready acquiescence and authority. Two complete laboratories were assembled and carefully packed in special cases, so arranged that all the articles were readily accessible, and the cases so constructed and packed as to be easily transportable by railroad, vessel, or wagon, according to circumstances. These laboratories are very complete and suitable for the prosecution of microscopical or pathological work of any character, either the investigation of disease or special study with the toxins and other products of bacteria. They are all ready to be shipped at a moment's notice to any given point and can be set up so as to be ready for work within an hour.

A valuable article upon these laboratories, prepared by P. A. Surg. H. D. Geddings, Marine-Hospital Service, with illustrations and a full list of the articles comprising each laboratory, was published in the annual report of the Service for the fiscal year 1900.

MONTHLY REPORTS.

In compliance with the regulations a report upon the current work is submitted to the Surgeon-General every month by the director of the laboratory. These reports show in abstract the variety and progress of the investigations being carried on.

NEW LABORATORY BUILDING.

An appropriation of $35,000 was made by an act of Congress, approved March 3, 1901, for a new building for the hygienic laboratory. The act provided for a site upon the old Naval Observatory grounds, and approximately 5 acres of the naval reservation were transferred to the Treasury Department for the specific purpose named in the act. The location is a commanding one upon the hill just to the west of the White House and overlooking the Potomac River, and by reason of its altitude and quietude is admirably situated for the work which the laboratory carries on. There is abundant room for the stables and outdoor runs for the animals, and the absence of car lines or heavy traffic in the immediate neighborhood makes the situation especially advantageous for microscopic and other work with instruments of precision on account of the freedom from vibration and tremor. With the approval of the Secretary of the Treasury, the appropriation has been placed upon the books of the Supervising Architect, who is now preparing the plans.

In this connection, I have the honor to recommend, in view of the future development and growth of the laboratory and its work, that it be organized somewhat on the following lines when the new building is inaugurated. The head of the laboratory should continue to be the director, corresponding to the medical officer in command of our stations of the first class, who is to have full charge of the laboratory, its work, its personnel, its property, etc., under the Surgeon-General. The main workings of the laboratory should be divided into four large divisions—(1) a chemical division, (2) a biological division, (3) pharmaceutical division, and (4) a pathological division, with a chief for each division. The chemists, zoologists, bacteriologists, botanists, pathologists, and other workers shall be directly under the chiefs of one or the other of these divisions. The administration of the laboratory may be conducted by the director, with the help of an executive officer and two stewards of the Service, with necessary clerks and stenographers.

A scientific library upon the subjects treated should be an important integral part of the laboratory.

As far as the buildings themselves are concerned, the following recommendations are made:

BUILDINGS.

Two buildings are necessary: (1) The laboratory proper; (2) the animal house.

1. The laboratory proper should be a structure affording the space and accommodations of a two-story building, with a basement.

The basement should contain rooms intended for general storage of apparatus, chemicals, supplies, and other property of the laboratory, and should be not less than 20 by 40 feet each, having 14-foot ceilings.

These rooms are to be fitted with shelves for the proper arrangement and storing of the objects mentioned, and should be lighted from without.

The basement should also have a room of sufficient dimensions to contain the heating apparatus for the building, a coal storage, the disinfecting apparatus used in the laboratory, an incinerator, and the pumps which will be needed for the distribution of water and vacuum supply, etc.

The first floor should contain two rooms devoted to the subject of hydrophobia, offices, a library, a reception room, a photographic room, janitor's quarters, and toilet.

The two rooms devoted to the subject of rabies must be, one a well-lighted room no less than 12 by 15 feet, the other (intended for the conservation and desiccation of the spinal cords) a dark room protected from the sun and about 10 by 10 feet. This plan contemplates the administration of the antirabic treatment in the library or office, so that it is very desirable though not absolutely necessary to have an additional room for the purpose of treating patients, which should be a cheerful, well-lighted place of good dimensions.

The office should be large enough to contain steward's desk, file cases, and the usual appurtenances of clerical work.

The library should be large enough to hold approximately 10,000 volumes and the usual arrangement for desks and chairs for reading and ready reference. The library is the only room in the building, according to this plan, which can be used as a reception and waiting room, and should therefore be connected directly with the office. The photographic room should be no less than 15 by 18 feet, and there must be a dark room about 6 by 8 feet. This photographic room is intended for photomicrographic work, and therefore must be on the first floor and so constructed and lighted as to avoid vibration as much as possible. It should be well lighted from at least three directions—west, south, and north. The dark room presents no special features outside of those found in the usual photographer's dark room.

The janitor's quarters should be sufficiently commodious for the janitor to live, for the reason that the laboratory will necessitate the presence of one man in the building both day and night.

The toilet room should contain water-closets, washstands, and a bath.

The second floor should contain two large rooms (workrooms) and two rooms for special investigation.

The large workrooms should be no less than 20 by 40 feet, with 15-foot ceilings. They should be lighted from at least three points of the compass, the principal point of light being north. The principal requirements of these rooms are abundance of light and a free and unobstructed air space. The wall space in these rooms is subsidiary to large windows. It is the intention to place a worktable before each window, and it is desirable that the window, in order to afford proper light for the desk, be no less than 4.5 by 8 feet and 2.5 feet from the floor.

The two smaller laboratories for special investigation are to be no less than 15 by 20 feet each, and must be abundantly lighted by northern light. Each one of these rooms should communicate freely with one of the large workrooms mentioned above, and still should be so arranged as to lend privacy when that may be desired.

The second floor is to contain, in addition to the four rooms mentioned above, an incubator and a cool chamber. The incubator is to be a room of special construction, about 10 by 10 feet, and should be entirely of brick construction and excluded from outside atmospheric influence. The temperature of this room will be kept constantly at 37° C., and therefore must contain special arrangements for heat regulation and ventilation. This room must be conveniently located to one of the large working rooms and its companion room for special investigation. The cool chamber is to be a similar structure, in which the temperature will be kept at about 20° C. It therefore must be located in a portion of the building protected from the influence of the sun and heat. In general construction it will resemble a large refrigerator.

The second floor should contain a toilet room with water-closets and lavatories.

The foregoing is a brief résumé of the rooms absolutely necessary in the construction of a modern laboratory building designed to carry out work of the character which the hygienic laboratory is now doing.

There are other rooms, however, that are very desirable, and if possible should be provided for in the structure:

1. A room that will contain precisely 1,000 cubic feet of air space, to be used in testing gaseous disinfectants. This room need not have outside light, but must have a ventilator. The walls of this room must be of a nonporous material, such as vitrified brick or glazed tiling.

2. It is very desirable to have two rooms for special investigation, one for the zoologist, and the other for work such as plague, which should be done in a room devoted to that subject alone.

3. It is also submitted that the director of the laboratory and others doing special investigations should be provided with rooms where they may work undisturbed. The requirements of these rooms are the same as given for the rooms for special investigation on the second floor.

GENERAL REQUIREMENTS OF THE LABORATORY.

A laboratory is essentially a workshop, and with this point in view need not be luxuriously finished, but should be of solid construction in order to avoid vibration, atmospheric and other influences.

It is not necessary that the structure be fireproof, but due attention should be paid to diminishing the risk from this cause to a minimum.

The walls should be hard finished, and there should be no right angles in the building; that is, all corners and junctions at walls and ceilings and floors are to be rounded out.

The building should be adequately heated in winter, and on account of its exposed condition air space above the second floor is desirable to prevent the excessive heat of the summer sun.

The building should be lighted by electricity and gas should be introduced into every room in the building for laboratory purposes, which would require large quantities and more than ordinary dwelling-house pressure.

Almost every room in the building also needs an abundant water supply, hot and cold. In the basement there should be sufficient water supply to operate the vacuum pumps. The vacuum tubing leading from these pumps is to be conducted to each workroom.

In all workrooms water, gas, vacuum, and pressure pipes are to be led to each worktable. These pipes are to be laid in pockets beneath the floor, with suitable hatches to render them accessible for inspection and repair.

There must be a dumb-waiter extending from the basement to the second floor, preferably two, one from the basement to each of the large workrooms.

In general it may be stated that the exterior architectural features are subsidiary to the internal arrangement.

The stable must consist of a building with sufficient accommodations for 10 horses and a large number of small animals. It should also have storage room for grain, fodder, and ordinary stable equipment. This stable must have a room for autopsies upon large and small animals, to be not less than 15 by 15 feet, and to have a concrete floor with a runway to a center culvert, and be abundantly lighted.

REPORT ON INTERNATIONAL MEDICAL AND SANITARY CONGRESSES, ETC.

The director of the hygienic laboratory having been detailed to represent the United States at the Thirteenth International Congress of Medicine and the Tenth International Congress of Hygiene and Demography, which were held in Paris during the months of August and September of 1900, his report and observations upon the proceedings of these congresses, as far as they apply to the work of the Service, will be found included in the report of the division of personnel and accounts.

These reports contain the very latest advancement and progress upon such subjects as toxins and antitoxins, immunity, cause of cancer, tuberculosis, propagation of plague, the nature of antidiphtheria serum, bacteriological examination of water, preservation of food stuffs, etc.

The director of the laboratory was also detailed to represent the country upon the international commission which was charged to revise the nomenclature of the causes of death. The work of the commission resulted in revising the Bertillon system. A complete report, as well as a translation, of the work of this commission will be found included in the report of the division of personnel and accounts.

PAN-AMERICAN EXPOSITION.

The preparation of the Service exhibit at the Pan-American Exposition, now being held at Buffalo, was placed under the charge of the director of the laboratory. Complete plans were prepared illustrating the workings of the Service in all its branches. Lack of funds rendered it impossible to carry out the complete prospectus as it had been drawn up. The exhibit, however, as finally inaugurated fairly represented the important divisions of the Service, especially the quarantine division, disinfecting apparatus, detention camps, and the work of the hygienic laboratory. The exhibit of pathogenic germs and their relation to diseases, as well as of the various instruments used in studying diseases, were fully represented in the exhibit.

An article was prepared as part of the exhibit, describing in brief the scope, the history, the personnel, the duties, and the various divisions of the Marine-Hospital Service. This article will be found in another division of the report under the heading of "Contributed articles."

APPENDIX NO. 1.

REPORT OF THE RESULTS OBTAINED IN A SEARCH FOR BACILLUS ICTEROIDES IN THE BLOOD OF PATIENTS SUFFERING FROM DISEASES OTHER THAN YELLOW FEVER IN THE DISTRICT OF COLUMBIA.

By Asst. Surg. DONALD H. CURRIE.

The claim has been made by certain investigators that *B. icteroides* has no specific relation to yellow fever, but is only a secondary invader in a certain per cent of cases of this disease, and that it probably also occurs in the blood of patients suffering from other diseases, as typhoid, etc.

It has even been said by the same investigators that it is only met with when the blood is obtained from the ear lobe under insufficient aseptic precautions, thus implying that it may occur as a skin contamination.

It is needless to say that this work has no bearing upon the relationship that exists between this microorganism and yellow fever, but its object is to ascertain if the bacillus of Sanarelli is met with either in the blood of those suffering from the ordinary febrile diseases prevalent in this latitude (District of Columbia) or as a skin contamination.

We recognize that the total number of cases which we have examined is not large, that the variety of diseases is limited, and that this is a locality far removed from those places in which *B. icteroides* has been met; but in spite of these defects we submit the results obtained for what they are worth.

Our method of collecting samples of blood for this purpose was as follows: Without even wiping off the skin of the ear lobe, we made a deep stab with a surgeon's straight needle, allowed the blood to flow over the skin, and when it was about to drop off from the lower part of the lobe we drew it into a Sternberg bulb and sealed the latter at the flame.

The bulb containing the specimen of blood was carried to the laboratory and in less than one hour planted in boullion at 37° C. Eighteen hours later we plated from these boullion tubes into agar-agar and gelatin, the former at 37° C., and the latter 19° to 22° C., and for the next five days we examined these plates daily and picked out all colonies of distinctive appearance and planted them on agar slants. At the same time that we plated from the original boullion tubes we also planted 1 c. c. of the contents of this tube into a fermentation tube containing 10 or 12 c. c. of a 2 per cent glucose solution in boullion.

This fermentation tube was then placed in the incubator at 37° C. and watched for the next seventy-two hours; if at the end of this time no fermentation occurred we discarded the tube, believing this to be proof that the organism of Sanarelli was not present in the cubic centimeter planted.[a]

If, on the other hand, fermentation had occurred, it was our intention to plate from this tube and pick out all distinctive colonies that occurred in the plate, transferring each directly to another tube containing glucose boullion.

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[a] As a control to this experiment we inoculated a boullion tube with 25 species of nonfermenting saphrophytes (a number of which were obtained from these cases) and *B. icteroides*, allowed the tube to rest in the incubator at 37° C. for eighteen hours. At the end of this time we planted a few drops of this mixture into a fermentation tube containing 2 per cent glucose boullion. Fermentation occurred in this tube, and we were able to recover *B. icteriodes* in pure culture by means of agar plates.

These latter fermentation tubes were to be kept at 37° C. for three days; all that showed fermentation within this time were carried to agar slants, while those that showed no fermentation were discarded.

The agar cultures, both of the organisms which had been carried directly from the plates, and those which had been planted from the fermenting glucose tubes, were classified in this manner:

First. They were stained and divided on their morphology into two classes, namely, bacilli and other forms (cocci, etc.); the organisms that were not bacilli were studied very little, usually only on one or two of the common media.

Second. The bacilli were then examined as to their motility, and those which were unmistakably nonmotile were placed in one class, while those which were motile, or doubtful, were placed in another class.

The nonmotile bacilli, as a matter of precaution, were carried to milk and glucose boullion, and the effect upon these media noted, for, although *B. icteroides* is a very motile organism, there is always the possibility that an organism's motility may be temporarily abolished by some accidental conditions.

The motile bacilli were allowed to grow upon agar slants for several days and then divided into three classes:

First. Nonchromogenic, nonspore-bearing bacilli.

Second. Spore-bearing bacilli (chromogenic or nonchromogenic).

Third. Chromogenic, nonspore-bearing bacilli.

Of these the first class was carried still further and the two latter classes dropped.

The first class was planted in gelatin and glucose boullion, and those which did not liquefy gelatin and did ferment glucose were chosen and placed by themselves.

These latter were considered to be the only organisms which could possibly be closely related to or identical with the organism of Sanarelli, and were carefully studied upon all media.

The patients from whom the cultures were obtained were seen by Assistant Surgeon Long and myself at the Providence Hospital of this city.

The histories of the cases given below consist of an abstract of the hospital history, together with whatever information our examination could elicit.

In those cases in which we were unable to agree with the diagnosis made by the physician in charge of the ward, a note of the fact appears in the history, together with our opinion of the nature of the illness.

Many of the patients entered the hospital too sick to enable the physician to obtain a very complete history, and sometimes these patients were not seen by us until so late in the disease that all characteristic symptoms and signs had disappeared.

As a result many of the histories are brief; but we believe that in most of the cases we have given sufficient clinical data to enable those who read this report to judge the correctness of the diagnosis.

Another cause for the brevity of our histories in those cases in which we had ample data was a necessity that existed for condensing such records in order that this report might not be too lengthy.

Owing to the fact that the material at our disposal was limited, the variety of diseases was not as large as we should have liked.

We endeavored to choose those in which we thought the secondary invasion by colon or closely allied organisms would be most likely to occur.

While in no instance did we take a second specimen from the same patient we made it a rule to examine at each of our subsequent visits all of the patients from whom we had previously obtained blood in order that we might be more certain of our diagnosis and be able to give a more complete history of the case.

REPORT OF THE CASES FROM WHICH BLOOD WAS TAKEN FROM THE EAR LOBE, TOGETHER WITH THE BACTERIOLOGICAL INVESTIGATIONS OF THE SAME.

Case 1—A. H., white; age 14 years.—This patient's temperature had been normal for over two weeks when he was seen by us. Although still confined to his bed, convalescence was progressing without interruption. We were unable to obtain a written history of this case, but the interne in charge of the ward stated that he had suffered from a typical attack of a moderately severe typhoid. At the height of the attack Widal's reaction was positive. The visiting physician had confirmed the diagnosis. His chart showed that he had run a temperature for five weeks ranging between 100.5 and 104.8.

Physical examination of the patient made by us revealed nothing to confirm or disprove the diagnosis. Widal's test, made by Assistant Surgeon Long, showed clumping in 25 minutes in a dilution of 1 to 20.

The specimen of blood was obtained from the ear lobe in the manner described above.

From this case we isolated—

1. A pearly white staphylococcus which failed to liquefy gelatin.
2. A white mould of the genus penicillium.

One c. c. of the original boullion tube was planted in a fermentation tube containing glucose boullion, but failed to cause the production of gas.

Case 2—W. B., colored; age 30 years.—This patient had entered the hospital two days previous to our visit with a temperature of 103.6. He gave the history of having been sick for more than a week. When seen by us he was in a stupor, but when aroused was made to answer questions in a fairly rational manner.

The facial aspect was very suggestive of typhoid; tongue dry and tremulous when protuded; teeth covered with sordes; abdomen slightly distended; spleen enlarged; bowels loose. His temperature had ranged between 100 and 103.5. Urine contained albumen and red blood corpuscles. Widal's test, made by Assistant Surgeon Long, gave a positive reaction.

Diagnosis, typhoid.

This patient died two days later; no post-mortem was held.

Blood taken from the ear lobe showed (1) a diplococcus which grew white on agar; (2) a large streptococcus.

Inoculation from the original boullion tube failed to cause the fermentation of glucose boullion.

Case 3—W. R., white; age 18.—When this patient was first seen by us his temperature had been normal for twenty-three days. He was still confined to his bed from muscular weakness, although his slow convalescence had not been interrupted by complications.

The only history we were able to obtain of this case was that his temperature had ranged between 101 and 104.6 for twenty-four days, and that Widal's reaction had caused clumping in 20 minutes with a dilution of 1 to 20. The interne stated that the diagnosis of typhoid had been made by him and confirmed by the visiting physician.

Widal's reaction, made by Assistant Surgeon Long, showed a positive clumping in ten minutes in a dilution of 1 to 20.

Diagnosis, typhoid fever.

In this case we isolated (1) a nonliquefying staphylococcus which produced a white growth with an orange-colored border when planted on agar slants.

A fermentation tube containing glucose bouillon was inoculated with 1 c. c. of the original bouillon culture, but failed to show a production of gas.

Case 4.—L. M., colored; female; age, 19 years.—Family history unimportant. Previous history: Had pneumonia when a child. Present illness began about two weeks previous with a severe headache, which continued without intermission for forty-eight hours. On the second or third day of her illness she was forced to take her bed, suffering with neuralgic pains in neck and back; anorexia and malaise. From that time up to the present she has had frequent attacks of epistaxis. When she entered the hospital she showed well-marked rose spots upon the abdomen, slight intestinal disturbance, dry-coated tongue, sordes, etc. Her temperature chart showed a variation between 100.5 and 103 When seen by us she presented the usual picture of a rather mild type of typhoid in the third week. The rose spots had disappeared, but there was still abdominal tenderness, enlargement of the spleen, and a glazed, tremulous tongue.

Widal's test was positive.

Diagnosis, typhoid fever.

This case ran a favorable course throughout the attack.

From the blood of this patient we isolated: (1) A chromogenic (yellow) short, slowly motile rod, which acidified litmus milk and caused its complete coagulation on the third day; produced indol; does not liquefy gelatin; does not ferment either sugar; produces a light-yellow granular growth on solidified blood serum without the liquefaction of the media.

The inoculation of a glucose fermentation tube from the original bouillon culture failed to produce gas.

Case 5.—M. M., colored; female; age, 21.—Family and previous history unimportant. Seventy days previous this patient had a chill, followed by a fever and sweats; she had a return, at irregular intervals, of these chills for two weeks following.

On the beginning of the third week she was sick enough to take to bed. On the twenty-first day of her disease she entered the hospital with a temperature of 103.6. She ran an irregular temperature, varying between 102 and 104 for the following month, when it dropped to normal. Three or four days later it rose to 101, and continued between 99 and 101 up to the time she was first seen by us. She has never suffered from abdominal pain or tenderness, epistaxis, or nervous symptoms.

Neither spleen enlargement nor rose spots have been noted at any time during the disease.

When examined by us she was quite emaciated, but mentally bright and appeared to be suffering from no subjective symptoms other than a sense of weakness. The nurse stated that she had been constipated throughout the attack. Physical examination showed a small area of consolidation in the left subclavicular region. Widal's test, made by Assistant Surgeon Long, gave an entirely negative reaction.

This patient's temperature gradually fell and finally reached normal about the eightieth day of her illness. Soon afterwards she was able to leave the hospital subjectively improved.

A diagnosis of probable typhoid had been made by the hospital physician. We are unable to state what disease this patient suffered from during the first week of her illness, but whatever her primary illness may have been, she had tuberculosis when seen by us.

From the ear lobe of this case we isolated: (1) A white staphylococcus; (2) a lemon-colored staphylococcus; (3) a large diplococcus; (4) a mold (penicilium glaeum).

A tube of glucose bouillon was not fermented by the 1 c. c. of the original bouillon culture.

Case 6.—A. B., white; male; age, 35 years.—Family and previous history unimportant. Present trouble: For the past twenty years he has had a double inguinal hernia. It had slowly enlarged up to two weeks ago, when he entered the hospital for the purpose of undergoing operation. A few days later Ball's operation for radical cure was performed. The following day the scrotum was found to be full of a blood tinged exudate, which was aspirated only to refill. Since the day following operation he had been running a temperature of 101.6 and has experienced a great deal of pain along the right spermatic cord. Physical examination shows no signs of peritonitis. Pulse, 90; respiration, 22; Widal's test, negative.

From the blood taken from this case we isolated: (1) Staphylococcus pyogenes albus.

One cubic centimeter of the original bouillon culture does not cause the fermentation of glucose.

Case 7.—J. B., white; male; age, 52 years.—Admitted to the hospital six weeks previous. Family history: Two sisters died of tuberculosis. Previous history: Had always enjoyed good health until present trouble. Began about five months ago with cough and expectoration of muco-purulent sputum, has lost 40 pounds in weight up to the present time; has had one slight pulmonary hemorrhage. He has several times had chills in the afternoon followed by profuse sweats during the night; has suffered a great deal from dysponea during the attack. Physical examination shows increased tactile fremitus, dullness, bronchial breathing, and coarse mucous râles over the left apex. His temperature has ranged between 97 and 101; respiration, 23 to 40; pulse, 78 to 108.

Diagnosis, chronic pulmonary tuberculosis.

From this case we isolated a cocco-bacillus, taking on a bipolar stain; nonmotile; does not liquefy gelatin; acidifies, coagulates and then peptonizes milk; does not ferment either of the sugars.

One cubic centimeter of the original bouillon culture does not cause the fermentation of glucose.

Case 8.—A. O., white; age, 27.—Family and previous history can not be obtained. Present illness: Entered the hospital seventeen days previous with mania á potu. Four days ago he was taken with a pain in the right side of thorax, rapid respiration, and a sudden rise of temperature; he soon became delirious. When seen by us he presented the following clinical picture: Respiration labored, 60 per minute, face pale except over malar prominences, which showed a dusky red hue; quiet but busy delirium; body bathed in perspiration; coughs frequently and expectorates a "rusty" blood-streaked sputum; pulse, 140 per minute; bounding in character; temperature, 103.

Physical examination shows a complete consolidation of the upper lobe of the right lung; edema of the lower lobe of same lung; liver enlarged to four finger breadths below the costal border and very tender to pressure; heart sounds muffled; second pulmonary no longer audible; spleen not enlarged.

Widal's test negative. (Patient died the following night.)

Diagnosis: Croupous pneumonia with dilation of the right ventricle. Alcoholism.

From this case there were isolated the following organisms: (1) A short nonspore-bearing rod with rounded ends, producing a fluorescent green pigment; peptonizes milk without previous coagulation; produces indol in Dunham's solution; liquefies gelatin completely in four days; is quite actively motile. Injected into the peritoneal cavity of a rabbit (2 c. c. of a forty-eight-hour bouillon growth) it caused no symptoms worthy of note. (*Bacillus fluorescence liquifaciens*, or some closely allied species. (2) *Bacillus subtilis.* (3) A short nonmotile almost strictly ærobic rod; does not liquefy gelatin; produces indol; forms a heavy white growth on agar slant; turns litmus milk strongly alkaline, and peptonizes without previous coagulation; does not ferment either sugar; produces a moist creamy-white growth on blood serum without liquefaction. One cubic centimeter of the original bouillon tube does not cause the fermentation of glucose.

Case 9.—J. R., white; age, 35—Family and previous history unimportant. Present history: Seven months ago a chancre developed on upper lip, followed by enlargement of neighboring glands. A few weeks later there appeared a macular eruption over his whole body; a diagnosis of syphilis was made by the attending physician. He entered the hospital a few days ago, and stated that five days previously he suddenly experienced numbness of the lower extremities for a few minutes; after noting this symptom, he was able to walk about the room, but soon became so incoordinate that he had to go to bed. Awoke the next morning completely paralyzed from the waist down.

Examination made upon entrance into the hospital showed complete motor paralysis of the lower extremities and sphincters, and all but complete sensory paralysis of same area. His condition has remained the same with the exception of extensive areas of gangrene which have developed on the thighs and over the sacral region.

Diagnosis, syphilis. Hemorrhage into the spinal canal causing a transverse myelitis.

This patient died about two weeks later.

From the blood of this case we isolated: (1) *Bacillus subtilis.* (2) An actively motile slender rod, which forms a heavy pellicle upon bouillon; does not liquefy gelatin; coagulates milk in three days; produces indol; does not ferment either of the sugars; forms a white, wrinkled growth on solidified blood serum. One cubic centimeter of original bouillon culture does not cause the fermentation of glucose.

Case 10.—Miss ——— ———; trained nurse.—Previous history: Has had several attacks of malaria. Five years ago she had a febrile attack which was diagnosed remittent malaria by the attending physician. She remembers very little about the symptoms from which she suffered except that it lasted for one month in spite of liberal doses of quinine.

Present illness: There was no written history of the case, but the physician in charge stated that she had experienced a chill four days previous, followed by a rise of temperature. The following day she had a similar attack. From this time until seen by us, two days later, she ran an irregular temperature with a maximum of 101. She had experienced no constitutional symptoms other than a slight malaise. What little examination we were allowed to make threw no light upon the nature of her illness. Her blood was examined by Assistant Surgeon Long and several malarial parasites found.

Widal's test showed large clumps in twenty minutes in a solution of 1 to 30 and fair-sized clumps in twenty minutes at a 1 to 40 dilution.

As this patient was free from fever and able to attend to her duties a day or two after she was seen by us, the possibility of her attack having been a mild case of typhoid can be excluded. The only explanation that we can offer for the positive Widal's reaction is that she had suffered from an attack of typhoid fever five years previous. From this case we obtained: (1) A rod-bearing and end-spore, its morphology not unlike the bacillus of tetanus. (2) A cocco-bacillus; nonmotile; produces a tenacious growth on agar; acidifies, coagulates, and afterwards peptonizes milk; does not produce indol; does not liquefy gelatin, and does not ferment the sugars.

One cubic centimeter of the original bouillon when placed in a fermentation tube containing 2 per cent glucose bouillon does not cause fermentation.

Case 11.—E. B., colored; female.—No family or previous history could be obtained. Present illness: Was seen by us two days after her entrance into the hospital.

Patient stated that her illness began sixteen days previous with a chill, headache, and pain in the abdomen; the two latter symptoms persisted for several days. On the fourth day of her illness she was forced to take to bed. Since her entrance into the hospital her temperature has ranged between 101 and 104; pulse 120 to 140; tension so low that it can scarcely be felt in the radial artery; respiration 30 to 40. Bowels move three or four times daily; delirium at night.

Physical examination: Tongue protruded slowly and with tremor, heavily coated with papillæ, showing through; abdomen very tender to pressure especially in the region of the ileo-cæcal valve. Pressure in this region causes loud gurgling. Spleen enlarged to three times its normal size; soft. Respiration roughened. Heart tumultuous. Widal's positive in seven minutes with a 1 to 30 dilution.

From this case we isolated: (1) A staphylococcus. (2) A streptococcus. (3) A yellow sarcina.

One cubic centimeter of the original bouillon culture does not produce the fermentation of glucose.

Case 12.—G. T., colored; aged about 60.—Family and previous history unknown. Present trouble: Entered the hospital six days before for relief from an inguinal hernia of twenty-two years standing. The day after his entrance the operation for radical cure was performed. The day following the operation the patient had two chills. Since then his temperature has ranged between normal and 102; pulse 70 to 110; respiration 35 to 40. Owing to the dressings we were unable to examine the condition of the wound. The patient was in a stupor from which he could be aroused with difficulty. Blood taken from the ear lobe contained only a tetrad. One cubic centimeter of the original bouillon culture did not cause fermentation of glucose.

Case 13.—E. O., colored; aged 20 years; female.—Family and previous history unimportant. Present history: Entered the hospital two days previous and stated that that morning she had had a chill which lasted for three hours. Soon after the chill began she experienced a sharp stabbing pain in the right mammary region, and a dry, painful cough. Since then she has slept very little on account of the severe pain from which she suffers. Cough is accompanied by the expectoration of a "rusty" colored sputum, which is so tenacious that the sputum cup can be inverted without causing it to flow. Temperature, 102 to 104; respiration, 30 to 50; pulse, 90 to 120. Physical examination showed complete consolidation of lower lobe of right lung and beginning involvement of the upper lobe of the same lung. Second pulmonary heart sound very much accentuated. Liver not enlarged, but slightly painful to pressure. Spleen not enlarged; bowels constipated; no pain on pressure over abdomen. A few days later this patient's illness terminated by crisis. From the ear blood of this patient we isolated a white staphylococcus in pure culture.

One cubic centimeter of the original bouillon culture does not cause the fermentation of glucose.

Case 14.—R. C. W., white; aged 32 years.—Family history unimportant. Previous history: Has never had any illness which could possibly have been typhoid. Present history: About fifteen days before he was seen by us he experienced a chill, followed by a rise in temperature. For the next five days he had a recurrence of chills at irregular intervals. During this time he suffered from severe frontal headache, which continued day and night for one week. On the eighth day of his illness he took to bed. Two days later he entered the hospital. Examination made at this time showed typical rose spots scattered over abdomen. These faded two or three days later. When seen by us he was quite bright for typhoid at this stage of the disease. Tongue protruded with tremor, heavily coated; abdomen distended and painful on pressure; spleen much enlarged; pressure over it causes pain; roughened inspiration over both lungs. Temperature has ranged between 101 and 102.5; pulse, 90 to 100; respiration, 26 to 29. A few days later this patient had a complication of croupous pneumonia. For the next week he was delirious, with high temperature and very grave general condition. When last seen by us his pneumonia had cleared up. The patient died a few days later. From the blood of this case we isolated only a white staphylococcus.

One cubic centimeter of the original bouillon culture failed to ferment glucose.

Case 15.—W. S. P., white; aged 28; male.—Family history unimportant. Previous history: Had typhoid six years ago. Present illness: Patient states that he was well up to three weeks ago (?), when he had a severe chill, followed by fever and sweat. The following morning he felt much better, but that afternoon he had a return of his chill, and, after midnight, a profuse sweat. One week later he began to cough and expectorate a muco-purulent sputum. He lost flesh rapidly. For the past two weeks has experienced a constant pain in the upper region of chest.

When seen by us the patient was very much emaciated, face pallid, eyes unusually bright. Temperature, 100; respiration, 20; pulse, 105. Physical examination showed no tenderness over abdomen on deep pressure; spleen about normal size or possibly a little enlarged. Examination of the lungs showed increase of tactile fremitus, shortening of percussion note, and prolonged expiration over the right apex anteriorly.

Diagnosis, incipient phthisis (?).

From the blood of this case we isolated only one organism—a white staphylococcus.

One cubic centimeter of the original bouillon culture failed to ferment glucose.

Case 16.—J. M., white; male; age, 16 years.—Family and previous history unimportant. Present illness began four weeks before with vertigo, headache, anorexia, and diarrhea. Entered the hospital the week following. A diagnosis of typhoid fever was made by the ward physician. There was no complete history of this case, and as he was seen by us after his temperature had been normal for two or three days, we could neither confirm nor differ from the diagnosis. His temperature chart showed a range between 100 and 103; pulse, 79 to 110; respiration, 19 to 27.

Widal's test was made by Assistant Surgeon Long, and showed a clumping in five minutes in a dilution of 1 to 30.

From this case we isolated only a staphylococcus.

One cubic centimeter of the original bouillon culture does not cause the fermentation of glucose.

Case 17.—W. N., white; age, 18; male.—There was no written history of this case, and when seen by us, four days after his entrance into the hospital, his condition was such that no statement could be obtained. As near as we could ascertain, he had been sick three weeks. His face wore a dull, listless expression; any attempt at speech was accompanied by tremor of the lips and emotional outbursts of sobbing. Examination of the abdomen showed several disappearing rose spots, considerable distention, with some pain upon pressure. The spleen was somewhat enlarged. Tongue protruded with tremor, dry and glazed; teeth covered with sordes; bowels constipated. Temperature from 101 to 102; pulse, 79 to 90; respiration, 28 to 30. We examined this case at a subsequent visit, and from the symptoms it presented then, together with the above, felt justified in a diagnosis of typhoid fever.

From the blood of this case we isolated only the white staphylococcus, so frequently met with as a skin contamination.

One cubic centimeter of the original bouillon culture did not ferment glucose.

Case 18.—C. D., white; male; age, about 35.—There was no written history of this case. Patient stated that three weeks previous, immediately after recovering (?) from an attack of specific urethritis, he experienced several chills, which were followed by a rise in temperature and profuse sweat. A few days later he noted a swelling in the groin, which reached the size of a hen's egg. This return of chills and fever continued up to the time of his entrance into the hospital. Since then he has had no chills, but has run an irregular temperature.

Physical examination showed a large bubo in the right groin, which was quite tender on pressure, but gave no signs of breaking down. We made a diagnosis of acute adenitis of specific origin.

The blood of this case was entirely sterile, but in order to be methodical we planted 1 c. c. of the apparently sterile bouillon tube into glucose bouillon; it is needless to say that we got no fermentation.

Case 19—Private case.—This patient was seen on the nineteenth day of his illness. With the exception of a temperature chart, there was no record of the course of the disease up to the time he was examined by us. His temperature has varied between 100 and 102; pulse, 80 to 90; respiration, 20 to 25. A diagnosis has been made of a mild type of typhoid. Tongue coated; abdomen tender; muscles tense and resistant to pressure; spleen covered by distended intestines, preventing its size from being ascertained, but there was pain in this region on firm pressure. Throughout the attack he has been constipated. We withheld making a positive diagnosis in this case until we had examined the blood. The latter showed a strong clump reaction in a dilution of 1 to 40.

From this case we isolated a white staphylococcus.

One cubic centimeter of the original bouillon culture did not cause the fermentation of glucose.

Case 20—T. D., white, aged 21, male.—Family history negative. Previous history good, with the exception of an attack of malaria last summer. Present illness: A few weeks ago patient began having rigors several times daily, followed by a rise of temperature; during the night his temperature would drop to normal, accompanied by a profuse perspiration. He lost weight quite rapidly and began to cough. As his condition continued to grow worse, he entered the hospital for treatment. When seen by us he complained of pain diffused over his chest and persistent attacks of coughing. Temperature, normal; face, pale, with the exception of flushing over the malar prominences. Physical examination shows: Shortening of percussion note; increased tactile fremitus over left apex; course mucous râles over whole chest.

Diagnosis, incipient pulmonary tuberculosis (?).

From this case we isolated a white staphylococcus in pure culture.

One cubic centimeter of the original bouillon culture did not ferment glucose.

Case 21—T. C., white, male, aged 28.—Family and previous history negative. Present illness began about three weeks before he was seen by us; the onset was so gradual that patient can not give the exact date. The first symptoms experienced by the patient were headache, malaise, constipation, and anorexia. He gradually grew worse, and about eight days previous was forced to take to bed. When seen by us his face wore a heavy, stupid appearance; tongue coated and dry, protruded, with tremor; abdomen, slightly distended, tender to pressure, especially in the region of the ileo-caecal valve. Spleen enlarged and soft; no rose spots have been noted. Temperature has ranged between 103 and 104.

Diagnosis, typhoid fever.

The blood of this patient was entirely sterile.

Case 22—C. R., colored, male, aged 29.—Family history unimportant. Previous history: Ten years ago patient had a continued fever which lasted for three weeks, but he does not remember the nature of this illness. When this man was first seen by us he had been confined to his bed for three weeks. He gave a history of a prodromal stage for one or two weeks before he took to his bed, during which he suffered from rigors, fever, sweat, epistaxis, and diarrhea. When seen by us his expression was apathetic; tongue, dry; gums, spongy and bleeding; teeth, covered with sordes; abdomen, distended and tender; abdominal muscles, resistant to pressure; spleen, much enlarged and tender to pressure; bowels move five or six times a day. His temperature had ranged between 101.5 and 105.2; pulse, 89 to 120, tension low; respiration, 20 to 22.

Diagnosis, typhoid fever.

From this case we isolated: (1) A grayish-white micrococcus. (2) A pearly-white staphylococcus. (3) A motile bacillus which differed from the bacillus of typhoid fever in two respects only, viz, it formed a scant but visible growth on potato and was not clumped by typhoid blood in a dilution of 1 to 10.

On agar, gelatin, sodium glycocholate agar, solidified blood serum; in broth, litmus milk, and lactose and glucose bouillon it was identical in appearance with Eberth bacillus. It did not produce indol and was actively motile.

One cubic centimeter of the original bouillon did not cause the fermentation of glucose bouillon.

Case 23—C. L., white, male, aged 43.—Family history unimportant. Previous history: Up to four months ago the patient was in Cuba; while there he suffered from several attacks of remittent malaria; disclaims having had yellow fever. Present illness: Three days previously the patient was taken with rigor and pain in left side of thorax; does not think his temperature rose very high above normal. A dry cough developed a few hours after the occurrence of the rigor. When seen by us his temperature was normal, but he still suffered from some pain in chest and persistent coughing; expectorates a mucoid sputum which is neither tenacious nor tinged with blood. Examination of the chest shows: Flatness on percussion; absence of tactile fremitus; much diminished vocal fremitus; distant breath sounds over the lower posterior portion of the thorax. Examination of the abdomen demonstrates an enlarged spleen, possibly the result of his previous malaria. Abdomen neither distended nor tender; bowels regular.

Diagnosis, pleurisy, with effusion.

From this case we isolated: (1) A spore-bearing rod. (2) A pearly-white staphylococcus. (3) An orange-colored staphylococcus. (4) A lemon-colored tetrad. (5) A mold of the genus aspergellus. (6) A mold of the genus penicillium. (7) A slender rod with rather square ends; actively motile; produces a raised, white, lobulated growth on agar; liquefies gelatin slowly; does not produce indol in Dunham's solution; produces a wrinkled growth on potato; causes a rapid peptonization of milk without previous coagulation; does not ferment either of the sugars. (8) A rod varying from a short bacillus to a very long filament; motile; produces a large, rapidly forming, thin, gray, coarsely granular colony on agar plates; a moist, slimy, gray growth on agar slant; invisible growth on potato; does not produce indol in Dunham's solution; does not produce any change in litmus milk, neither liquefies gelatin nor ferments either sugar; typhoid blood in a dilution of 1 to 15 fails either to arrest motility or bring about a clumping.

One cubic centimeter of the original bouillon culture failed to cause the fermentation of glucose.

Case 24—E. P., white, male, aged 20.—Family history: Mother died of pulmonary tuberculosis. Previous history: Had an attack of pneumonia when 1 year of age. Present trouble began about eighteen days previous, with malaise, headache, pain in back and abdomen, and constipation. Patient experienced a rise of temperature, which was especially high in the evening, but which left him at no time during the twenty-four hours. About a week later he was forced to take to bed and the following day entered the hospital. Examination on entrance showed a temperature of 101, tender, distended abdomen, and rose spots. When the patient was seen by us his face wore a dull, listless expression; tongue rather dry; abdomen distended and tender; spleen enlarged. There were several disappearing rose spots still visible over abdomen. The patient had a moderate diarrhea, which had been preceded by an obstinate constipation. There was a slight congestion of the bases of the lungs posteriorly. Since entrance to hospital his temperature had ranged between 101 and 104.4; pulse, 80 to 100; respiration, 15 to 26.

Diagnosis, typhoid fever.

From this case we isolated (1) a pearly white staphylococcus; (2) a mold of the genus penicillium.

One cubic centimeter of the original bouillon culture failed to cause the fermentation of glucose.

We have thus examined the blood of 24 patients ill with the following diseases:

1. Typhoid, 12 cases, 2 of which proved to be fatal.
2. Tuberculosis, 4 cases.
3. Croupous pneumonia, 2 cases, 1 of which was fatal.
4. Post-operative cases running a moderate temperature, 2 cases.
5. Malaria, 1 case.
6. Transverse myelitis, 1 case; fatal.
7. Adenitis, inguinal, 1 case.
8. Pleurisy, 1 case.

Of these 24 cases, 4 were fatal, a mortality of 16⅔ per cent.

These patients, we believe, fairly represent the average febrile cases that enter a general hospital in this latitude at this season of the year (October, November, and December). The mortality, and from this we may judge the severity, is fully up to the average of such cases.

In none of these did we isolate either *B. icteroides* or any member of this group, with the possible exception of the typhoid-like organism obtained from case 22. In no case was there a production of gas in the fermentation tube containing glucose bouillon, which had been liberally inoculated from the original bouillon culture.

From the nature of most of the organisms isolated it is fair to presume that by far the greater number of them were contaminations from the skin.

As we said in the beginning of this article, we recognize that the total number of cases and variety of diseases examined are comparatively small, but when we take into consideration that *B. icteroides* can be isolated in from 50 to 90 per cent of cases of yellow fever *when the blood is obtained from the ear lobe*, we must admit that those who hold to the theory that *B. icteroides* is only a secondary invader have yet to explain an interesting fact, namely, why it does not also invade the blood of man in the course of other febrile diseases. And if, as a certain investigator has implied, it is an organism commonly met with on the skin of man and is not found in the blood taken from the lobe of the ear when this portion of the skin has been well cleansed, why did we not find it present in our cultures when we did not even take the simple precaution of washing the ear lobe previous to obtaining blood?

We wish to express our thanks and appreciation for the kind and courteous treatment we received from both the management and medical corps of the Providence Hospital, of this city.

APPENDIX No. 2.

FILTRATION OF WATER SUPPLIES.

At request of the Committee on the District of Columbia of the United States Senate the Surgeon-General directed Passed Assistant Surgeon Geddings to prepare a paper comparing the slow sand and mechanical methods of filtration, which paper, together with the Surgeon-General's letter of transmittal, follows:

[Letter.]

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL, M. H. S.,
Washington, January 2, 1901.

SIR: I have to acknowledge the receipt of the request of the Committee on the District of Columbia to present a paper on the relative merits of the so-called mechanical system and of the slow sand filtration system from some person in this Bureau, together with such statement thereon as I may see fit to make.

In reply I have the honor to inclose herewith a report upon this subject from P. A. Surg. H. D. Geddings, which, it seems to me, in a clear and thorough manner canvasses the relative merits of the two systems mentioned. I think proper to state that a verbal request of this same nature was received some time ago from Mr. Charles Moore, clerk of the committee; and conferring with Dr. Geddings, I learned that he had been giving this subject close and exhaustive study, particularly during the past two or three months, and the inclosed report, though brief, is the result of a very thorough sifting of the literature upon the subject, as well as of previous practical and scientific research.

I think it proper also to add that I am not prepared, neither is Dr. Geddings, to give an unalterable opinion advocating irrevocably either of the systems under consideration, as I feel that to do this would require on his part and my own somewhat of the same investigation of all the facts, local as well as scientific, which it would seem are now being inquired into by your committee; but I wish to state that, so far as Dr. Geddings's report is concerned and the statements made by him, I have studied the matter and wish to express my confidence in his conclusions.

I think it due to the committee also to give the following statement concerning the qualifications of Dr. Geddings, whose mature judgment during the thirteen years in which he has been connected with the Service has been frequently availed of in scientific matters by the Bureau. Moreover, Dr. Geddings has given special attention to the matters under consideration throughout his professional life, and has had exceptional training and opportunities for observation in this particular line of work.

Before entering the Marine-Hospital Service he was adjunct professor of chemistry in the South Carolina Medical College, making at that time water supply and water contamination a specialty. Subsequently he made a special study of bacteriology in New York and continued the same at Johns Hopkins University laboratory, and has been almost continuously engaged since in bacteriological and chemical work demanded by the Marine-Hospital Service, including a detail as technical delegate representing the United States at the international conference with regard to plague, held at Venice in 1897, immediately thereafter spending the greater part of a year in Koch's laboratory in Berlin and at the Pasteur Institute in Paris.

Dr. Geddings was also a member of the commission appointed by the President for scientific investigation into the cause of yellow fever. Recently he has been giving much attention to the matter of water supply of cities and has been in correspondence with the representatives of the Service in France and Belgium, who have been giving like attention to this matter and have forwarded to the Bureau the latest developments with regard to the purification of water supplies in those countries.

Attention is invited to the three inclosures accompanying Dr. Geddings's report.

Respectfully, WALTER WYMAN,
Surgeon-General Marine-Hospital Service.

Hon. JAMES MCMILLAN,
Chairman Committee on District of Columbia,
United States Senate.

[Inclosure.]

HYGIENIC LABORATORY, U. S. MARINE-HOSPITAL SERVICE,
Washington, D. C., December 26, 1900.

SIR: In compliance with your verbal instructions to me to submit to you a comparative statement of the relative merits of the English or so-called "slow sand filtration method" and the American or "mechanical" system of water purification, with any suggestions which might occur to me, I have the honor to submit the following:

It is deemed expedient for the sake of clearness to take up the systems separately, to then institute the necessary comparisons, and to conclude with my personal impressions and the recommendations derived therefrom.

I. THE ENGLISH OR SLOW SAND FILTRATION PROCESS.

Inquiry shows that this system was first instituted about 1829, and has changed little from that date to this. The advocates of the system, who are many and of eminent scientific attainments, claim that the process is an application and elaboration simply of natural processes and that following nature the most perfect results are arrived at.

The process in brief is as follows: Large reservoirs of masonary, concrete, rubble, or other material are constructed, and in these reservoirs the filter beds are constructed, the foundation of the beds consisting of cobbles or stones of a uniform diameter (from 4 to 6 inches), which serve to support the layers of gravel and sand and to form efferent channels for the delivery of the filtered water. This layer is surmounted by one or more layers of gravel, varying in size from 1 to one-fourth inch, and these are in turn surmounted by a layer of sand of uniform size to a depth varying from 36 to 48 inches or more.

The size of the grains of sand plays an important part in the process, but more important even than the size of the grains is their uniformity of size and shape.

This method of construction has been departed from in late years by substituting rows or channels of drain tile with open joints for the cobble layer, and in some instances dispensing altogether with the gravel layers. The filter being constructed, the water to be filtered is admitted, preferably from the bottom of the bed, in order to displace all air with a minimum of disturbance, and the water is then allowed to gather on the filter bed in a layer of a thickness equivalent, in general terms, to the depth of the sand layer of the filter. The process of filtration then proceeds. The water is maintained at a uniform depth; the process is at first rapid, but soon shows a falling off in quantity; turbidity is diminished and a great diminution is noted in the bacterial content of the effluent water. This last is the most important feature of the process from a hygienic point of view, and must now be described somewhat in detail.

It goes without saying that the layers of sand will arrest all particles in the water which are greater in size than the meshes or interstices of the sand grains. But more than this is needed; otherwise but few, if any, bacteria would be removed. But an interesting change now takes place in the interstices and upon the surface of the filtering layer. There is a rapid formation of a pellicle or scum upon the surface, consisting of the coarser particles suspended in the water; and these, constantly increasing in size, form a place of lodgment for the bacteria contained in the water, which rapidly aggregate into a continuous surface layer, penetrating to only a very small distance below the surface and into the channels between the particles of sand.

To this layer the Germans give the name of "Schmutzdecke," and the English the name of "bacterial felt." This layer supplies a constantly increasing resistance to the passage of water, very much diminishes the output of the filter, and is the most important factor in the bacterial purification of the water subjected to the action of the filter beds. In time this layer becomes so resistant that the action of the filter beds is almost entirely arrested; but prior to this another change in the conditions becomes evident, viz, that far from diminishing the number of bacteria found in the affluent water the effluent contains more bacteria than the crude water. This is not to be wondered at, for it can be laid down as a general axiom that in the life of every filter there comes a time when it gives back to water passed through it the bacteria separated from former affluents.

The "Schmutzdecke" or "bacterial felt," then, is at once an important factor of efficiency and a source of retarded action and possible delay in the slow sand process of filtration.

When this time arrives, the filter bed must be cleaned. This operation is performed by draining off the water, and then with sharp shovels removing the upper layer of sand to the depth to which it shows any discoloration. Two to three inches is usually sufficient. Fresh sand may or may not be used to replace that removed in scrapings. The usual practice is to perform repeated scrapings, and when as much as 6 inches of the original stratum has been removed, to replace this quantity. The sand removed is submitted to washing either by the somewhat crude method of the application of a hose or, better, in revolving mechanical washers. When thus washed and dried, it may again be used in the filter beds. The sand having been removed, a smooth surface is again produced by the application of the rake or other appliances, which remove the marks of the feet of the workmen employed in the cleaning. Water is again admitted to the beds and the product is allowed to run to waste until a normal rate of filtration is arrived at, when the whole process is repeated from the beginning.

II. RATE OF FILTRATION BY THE SLOW SAND METHOD.

The rate varies with many conditions, such as the ordinary practice obtaining in the country or locality, the nature of the water subjected to treatment, the fineness of the sand employed, the loss of head or initial pressure which may be determined upon, and, lastly, the vigilance which is exercised in examining the output. Turbidity in the affluent water will soon clog the filters and lead to a slow output. A fine sand will naturally filter more slowly than a coarse or coarser one, and a plant which is not carefully supervised as to bacterial efficiency will give or be permitted to give a far greater output than one in which everything else is sacrified to this end.

The output is usually expressed in gallons per square foot of filtering surface, or more generally in gallons per acre of surface per day of twenty-four hours. Expressed in these latter terms the rate reported from European cities varies from 13,895,000 gallons per acre per day in Oporto, Portugal, and 7,500,000 gallons per acre per day at Zurich, Switzerland, to the comparatively low figure of 1,655,000 per acre per day by the West Middlesex Company (London, England).

The water at Zurich is derived from a lake of great natural purity and without turbidity; the London water is the turbid water of the Thames, contaminated by surface pollutions and drainage, and also by the discharge of the products of numerous factories and industrial plants.

The filters recently constructed at Albany, N. Y., are constructed to give an output of 3,000,000 gallons per acre per day under the best conditions of friction and loss of head.

The regulations of the imperial German board of health place the maximum at 2,613,525 gallons per acre per day, or 60 gallons per square foot, but as this is accompanied by certain other conditions this output may be considerably reduced, while it may not be exceeded. Colonel Miller, in his report to the Secretary of War, bases his estimates for the supply of the city of Washington on the rate of 3,000,000 gallons per acre per day—a seemingly large estimate when the number of days of turbidity of the Potomac water is taken into consideration.

As has already been stated, the filter beds require cleaning at longer or shorter intervals. This renders it necessary to have a reserve filter, the area of which is variously arrived at, but which may be stated in general terms to be equivalent to 20 to 25 per cent of the total area; in other words, the quantity of water desired and the rate of filtration being determined upon in advance, 1.2 to 1.25 acres must be allowed for instead of 1 acre.

III. COST OF FILTER BEDS FOR THE SLOW SAND FILTRATION METHOD.

This of course varies with the cost of land, materials, labor, style of construction, and is largely increased if the beds are to be covered or to remain exposed to sun and air. The price is best stated in terms of cost per acre, and is as follows:

	Uncovered.	Covered.
	Per acre.	*Per acre.*
London	$24,000 to $39,000	
Liverpool	24,000 to 39,000	
Zurich		$98,000
Hamburg	30,500	
Berlin		70,000
Average for all European cities	45,000	68,000
United States:		
Poughkeepsie, N. Y		112,641
Ilion, N. Y		101,900

The filters recently constructed at Albany, N. Y., having an area of about 0.7 acre, are stated to have cost $496,633. including all adjuncts, which are of remarkable completeness. Except in the case of Albany, the prices given do not include sedimentation basins, a very necessary adjunct, and which would materially increase the cost.

Colonel Miller estimates the cost for the city of Washington of a plant having 27 acres of filter beds and 8 acres for other purposes at $2,461,338, allowing for covered filter beds. The necessity for this particular item of expenditure is based upon observation of average January temperature for a term of years, and hydraulic engineers have drawn upon the map of the United States an isothermal line having one end upon the Pacific coast at a point north of the State of Washington and sweeping south in a curve to the south of Santa Fe, and thence east to a point on the Atlantic coast, about midway between New York and Atlantic City, N. J., and touching Philadelphia. This being but slightly north of Washington, the provision for covered filters would seem to be a wise one.

These have been most gratifying from almost all points of view. Turbidity is diminished, but in the case of really turbid waters such a sparkling product is not obtained by this system as may be arrived at by others. It is without beneficial effect upon stained or tinged waters as opposed to turbid waters. Judged from the standard of bacterial efficiency the results are most excellent, and this is after all the most important consideration from a sanitary point of view.

Figures are given as follows:

Percentage of bacteria remaining in water when output is—	Per cent.
500,000 gallons per acre	0.010
1,000,000 gallons per acre	.048
1,500,000 gallons per acre	.067
2,000,000 gallons per acre	.088
3,000,000 gallons per acre	.356

(Lawrence, Mass.; water from Merrimac River.)

Other statements give almost as gratifying results. The general bacterial efficiency of the slow sand filtration under efficient supervision may be stated as varying from 98.5 per cent to 99.3 per cent. The filters require cleaning at intervals varying from three to five weeks. Colonel Miller in his report estimates for nine cleanings in the course of the year or an average of five and seven-ninths weeks of activity. The advantages of the slow sand filtration, therefore, are: (1) Great bacterial efficiency; (2) that no chemical or other agent is added to the water before or during the filtering process.

The disadvantages are (1) the very large space needed for the construction of the filter beds; (2) the cost of constructing these beds apart from the cost of the ground upon which they are built; (3) the fact that turbidity is only partially removed and that stained or tinged waters are not improved in appearance; (4) the liability to breakage or disturbance of the "Schmutzdecke," or active filtering agency in the process; (5) the possibility that, even with an undisturbed "Schmutzdecke," the cleaning of the filters will be too long delayed, and that the water will come from the effluent with a larger bacterial content than the affluent; (6) the inclination to force the beds beyond their capacity in times of scarcity or unusual consumption of water; (7) the certainty that if the "Schmutzdecke" is broken or cracked in any given filter bed the water from that bed will be contaminated, and, if not recognized at once, that the whole contents of the storage reservoirs will be contaminated from the admixture.

IV. MECHANICAL FILTRATION—THE SO-CALLED AMERICAN SYSTEM.

The filtration of large quantities of water through limited areas of sand, and usually under pressure and accompanied by the employment of patented appliances, is a system so entirely confined to this country as to have received the name of the "American" system.

The essential feature of the process consists in the addition to the water to be purified of a charge of alum or other soluble alumina salt and then admitting the water to the filter, which consists of a cylindrical vessel, placed either vertically or horizontally, and filled two-thirds full of fine sand of uniform size.

The alumina compound (a sulphate) unites with the carbonates of lime and magnesia contained in the water, and is precipitated as alumina hydroxide, a magma of gelatinous appearance and quite insoluble in water.

The reaction may be stated as follows:

$$K_2Al_2\ (SO_4)_4+3CaCO_3+3H_2O=3CaSO_4+K_2SO_4+3CO_2+Al_2\ (OH)_6.$$

This material falling to the bottom of the water mechanically entangles all suspended matter and bacteria, and is deposited in a layer upon the surface of the sand filter, from which it is removed at stated intervals by a reversed current of filtered water, thus cleaning and washing the filtering sand.

This washing can be accomplished in about fifteen minutes and at an expenditure of filtered water which need not exceed 4 per cent.

It will thus be seen that the action of the alum is to form rapidly and artificially a layer or coating upon the surface of the filter to replace the "bacterial felt" layer of the English system.

A further action of the precipitated aluminum hydroxide is to unite with the dissolved coloring matters of tinged or stained waters, removing them, and producing a clear and sparkling product, which can not be arrived at by the English system.

It must be distinctly understood that the addition of alum is an essential in this process, as the very rapid passage of the water through the sand layer without it would simply amount to a straining and would not remove the bacteria. It must also be borne in mind that in order to effect a successful sedimentation by the use of alum the water must contain carbonates of lime and magnesia, either in suspension or in solution. The chemical reaction shown above can not take place in their absence, but in the rare cases in which there is a total absence of these ingredients they may be supplied and the alum system employed either by the direct addition of chalk to the water prior to the addition of the alum or by passing the crude water through a preliminary sand strainer in which a portion of the sand is replaced by crushed marble (crystallized calcium carbonate).

In all processes under the American or mechanical system the alum in solution is added to the water by mechanical appliances in quantity either sufficient to dose the carbonates present or to react upon such a proportion of the calcic contents as will effect a clarification of the water subjected to the process. Any detailed description of the various forms of filtering apparatus operating under this system would be impossible and undesirable here. The principle has been given, but it may be said in addition that every type possesses mechanical appliances peculiar to itself to break up the deposited bacteria-bearing layer and facilitate its removal during the process of washing the filter.

OBJECTIONS URGED AGAINST THE USE OF THE MECHANICAL SYSTEM OF FILTRATION.

These have been numerous, some made in all good faith and having a certain amount of scientific reasoning behind them, but by far the greater number have arisen from ignorance and prejudice and should be capable of removal or withdrawal by reasonable explanation.

The prime objection urged is, in the first place, that a germicidal or chemical substance is added to the water in the shape of alum, and that this alum is permanently found in the filtered water and is injurious.

To this it may be answered that the alum is not added with a view to its bacterial effect. Indeed, in the quantities in which it is employed (one-fourth grain to 3 grains per gallon), it is a matter of easy demonstration that it is absolutely without such germicidal effect.

That it passes into the filtered water as alum is also denied, and if it is so present it is a proof that it has been added in a perfunctory and injudicious manner. The object of the addition of the alum has been stated. It has been shown that its quantity must never exceed the amount necessary to react with the lime contained in the water. This whole amount may not be needed to effect a perfect product, but may be held in reserve to be added to the water in times of great or unusual turbidity. The most that can be urged against its use is that a certain quantity of the lime contained in water as carbonate is converted into sulphates, thus changing a portion of the removable into permanent hardness, and while this converted hardness may make a large display in an exposition of percentage proportions, it is in reality a small and almost perfectly negligible quantity.

The process then is unobjectionable from a chemical or sanitary standpoint.

EFFICIENCY OF THE MECHANICAL SYSTEM.

This has been very gratifying, and it is believed that the results will bear the closest scrutiny.

A well-known corporation operating a system of rapid or mechanical filtration makes the following guaranty and gives the following standard of purity:

First. All odor, color, and suspended impurities shall be removed.

Second. The free ammonia in the filtered water shall not exceed 0.05 part in 1,000,000.

Third. The albuminoid ammonia in the filtered product shall not exceed 0.1 part per 1,000,000.

Fourth. No measurable amount of the coagulant or other purifying agent used shall be left in the filtered water.

Fifth. The microbes in the filtered water shall not exceed 100 per cubic centimeter.

An examination of these results shows that they are all that could be desired. The removal of turbidity and color could not be accomplished by sand filtration. The amounts of free and albuminoid ammonia are entirely unobjectionable and are within the limits given by the best authorities as constituting good water. The number of bacteria per cubic centimeter is the limit set by Koch, and is the official requirement of the German imperial health board.

Can these promises be maintained?

A series of experiments were made with a set of Jewell filters at Lorain, Ohio. The water was the water of Lake Erie. For the period of one week, with alum to the amount of 2.58 grains per gallon, the bacterial efficiency was 98.9 per cent. For the period of one week, using 2.50 grains per gallon, the bacterial efficiency was 98.4 per cent.

For six weeks, the quantity of alum ranging from 0.94 to 2.58 grains per gallon, the average rate of output was 1.14 gallons per square foot per minute, and the average of bacterial efficiency 96.4 per cent.

In the Pittsburg experiments during six months the Jewell filter gave an average bacterial efficiency of 97.45 per cent, the raw normal water containing 11,531 bacteria per cubic centimeter. In the same city and for six months the Warren filter, on water containing 11,531 bacteria per cubic centimeter, gave an average bacterial efficiency of 98.26 per cent.

A sand filter receiving the same water for the same period gave a yield containing 105 bacteria per cubic centimeter. It is believed, therefore, that it must be conceded that mechanical filtration is safe and efficient.

Statistics have been given which would seem to show upon their face that the introduction of mechanical filtration in certain cities, as Elmira, N. Y., Newcastle, Pa., and Lexington, Ky., has caused, or at least been coincident with, an increase of typhoid mortality. This is hardly fair to the statistics, and is certainly unfair to the mechanical system, for no mention is made of the fact that during the period which is presumably covered by these figures there has been a gradually but constantly spreading wave of typhoid over the entire country, reaching its acme in 1898-99 with the aggregation of volunteer troops in large camps of instruction, and which has resulted in the contamination of streams and sources never heretofore suspected of contamination.

Again, it may be here stated once and for all that no filter or system of filters can or will exert any selective elimination of pathogenic bacteria. The pathogenic or sewage bacteria in any given water simply bear a relative proportion to the whole bacterial content and will be proportionately removed by any system of filtration in direct ratio to its bacterial efficiency—no more and no less. To claim otherwise is not just and can not be substantiated.

COST OF MECHANICAL FILTRATION.

As has been before stated, the various types of apparatus designed to accomplish rapid or mechanical filtration are all controlled by companies or corporations, are protected by patents, and are either sold outright or operated on a royalty. This being the case, it is obviously impossible to form as close an estimate of cost for this system as is the case in the sand method.

Again referring to the report of Colonel Miller, we note that on the basis of a daily supply of 60,000,000 gallons per diem he estimates the cost of the plant required at $1,081,377, as compared with $2,461,338 for the English or slow sand method.

The most striking point of difference occurs in the amount of ground required, viz, 163,430 square feet for the mechanical system, as against 1,111,176 square feet for the English.

The comparative cost of operating does not enter into such a communication as the present and will not be dwelt on. It is interesting, however, to note that Colonel Miller places the average amount of alum coagulent necessary per year at the low figure of 1.3 grains per gallon, a quantity which need excite not the slightest uneasiness.

The small area of ground required is easy of explanation when it is remembered that water can be passed through the sand filter at the rate of from 120,000,000 to 150,000,000 gallons per acre per day under the mechanical system, as against the maximum of 3,000,000 per acre per day in the slow sand method.

A COMPARISON OF THE SLOW SAND AND MECHANICAL SYSTEMS OF FILTRATION.

Cost of installation.—As given by most authorities and confirmed in detail by Colonel Miller, the mechanical system is much the cheaper. In the case of the proposed supply for the city of Washington the figures, as already quoted from Colonel Miller, show that the cost of the mechanical system is only about 43.5 per cent that of the slow sand filtration method.

Cost of maintenance.—This is given by Colonel Miller as follows:

Cost of operating per 1,000,000 gallons.

	Including interest charges and deterioration.	Excluding interest charges and deterioration.
English filters	$8.51	$3.44
American filters	8.75	5.61

Efficiency.—The English system can not be counted upon to remove turbidity. It will reduce it to a certain extent, but the filtered product will not be sparkling. It will be without effect on color dependent on dissolved matters, and the report of Mr. Weston to Colonel Miller shows that the Potomac water is slightly tinged. The great turbidity of the Potomac water during certain seasons of the year will reduce the efficiency of the English filters and make more frequent cleaning a necessity. As this turbidity occurs most frequently in winter, the cleaning of the filter beds will subject them to freezing, which has a very deleterious influence on their efficiency. On the other hand, the American system will entirely remove turbidity and color, and the increased seasonal turbidity will have no prejudicial effect upon the filters of the American system, as these are subjected to periodical cleaning or "scrubbing" with a portion of the water filtered, which cleaning water need not exceed 4 to 5 per cent of the total product.

Bacterial efficiency.—As has before been stated, no filter will or can be expected to exert a selective influence in the matter of bacterial separation. A filter will remove a certain percentage of the bacterial content of water, and if pathogenic or sewage bacteria are present these will be removed in direct proportion to their number as compared with the whole bacterial content.

The bacterial efficiency of the slow sand system can not be put higher than 98.5 to 99.3 per cent as a maximum. Immediately after cleaning the efficiency is much less, and when the filters are in need of cleaning they may show an even more decided departure from their normal. As has already been shown, the Pittsburg experiments with the Jewell filters gave results approximating 98 to 99 per cent and were within the limit of 100 bacteria per cubic centimeter of filtered water. At the same time a sand filter operating on the same time and presumably under advantageous conditions gave an average of 105 bacteria per cubic centimeter.

The number of 100 bacteria per cubic centimeter was fixed upon by Koch as the extreme limit which should be contained in a properly filtered water and was adopted by the imperial German board of health as a standard. It therefore seems perfectly fair to say that the mechanical filters have given a satisfactory bacterial result, and the fractional percentage in favor of the sand system should not be held to counterbalance its recognized defects in the matter of slow delivery, opalescent or slightly turbid product, great cost, and liability to accident through the breakage, cracking, or displacement of its layer of "bacterial felt." This last is not an imaginary danger. Instances are on record of serious contamination of storage reservoirs traceable on examination to a slight crack in this layer.

As a result, therefore, of my investigations, I would here beg to state to you that I consider the mechanical system, under careful and intelligent supervision, as perfectly capable of furnishing a safe city water supply.

But in this connection I would like to go a step further and to submit to you an additional recommendation. the adoption of which would, I believe, result in a water supply beyond criticism and perfect from the æsthetic and bacterial points of view.

I refer to the recently exploited system of water purification by the methods of Messrs. Marmier and Abraham, described in No. 44, Volume XV, of the Public Health Reports of the Marine-Hospital Service, under date of November 2, 1900. The reports therein contained show that the application of ozone to water supplies, under the processes of Marmier and Abraham, give a product practically entirely free from any bacterial contamination, the result being simply about one colony of the *Bacillus subtilis*, or hay bacillus, per 25 cubic centimeters of water treated, with an absolute removal of the bacteria, which, to the average number of 2,200 per cubic centimeter, were present in the water supplied to the city of Lille, France. The experiments were conducted upon quite a large scale, as compared with ordinary laboratory experiments, and a commission composed of such eminent scientists as the bacteriologists Roux and Calmette and the chemists Buisine and Bouriez commends the process in unqualified terms as satisfactory from a bacteriological standpoint in that all bacteria other than a few hay bacilli are removed and from a chemical standpoint in that organic matter is destroyed, no permanent chemical added to the water, and that organic matter being destroyed the water is less likely to become the seat of subsequent bacterial infection by reason of the removal of the substances upon which bacteria thrive.

Again, the cost of the process can not be definitely entered upon here, but it would seem to be quite reasonable. It is stated that an installation for the treatment of 100,000 cubic meters of water per day (about 21,000,000 gallons, approximately), all apparatus being in duplicate, would be about $160,000, and that the cost of treatment would be about $0.0008 to $0.0012 per cubic meter where coal is used to generate the power and only about one-half this amount where water power can be used for this purpose. Another valuable feature of the process would seem to be that it requires little space for the installation, a building of comparatively small size, containing the boilers, engines, dynamos, ozonizing apparatus, etc., and it would seem perfectly feasible to operate the ozonizing method in conjunction with any other system of purification to the end that a more perfect product might be obtained.

I would respectfully submit to those having the matter in charge the adoption of such a combined system for the city of Washington, viz, a system of mechanical filtration, with all its advantages of small required area, comparatively small first cost, perfection of product as to removal of color and turbidity, and the removal of all bacteria save a number not to exceed 100 per cubic centimeter. Add to this the ozonizing process, which would definitely remove these 100 bacteria and render the water as it enters the storage reservoirs unfit for the maintenance of bacterial life, and it would seem that a water supply challenging the world for purity and wholesomeness would be the result.

Another important feature would be that the system being a double one, with both of its component parts of almost absolute perfection, there would be a minimum of danger or embarrassment from a breakdown or derangement of either of these elements. Were the mechanical filters to be temporarily out of order, the ozonizing plant would still furnish a water bacterially pure, but perhaps a little turbid or tinged.

Were the ozonizer out of action the mechanical filters would still furnish a product æsthetically pleasing and safe from a bacterial point of view. I do not pretend to go into the mechanical aspect of the subject or the engineering difficulties which it might present, but these matters might be safely left to the very high talent which now have these features of the problem under consideration.

It is needless, it is believed, in concluding this review, to apologize for its incompleteness and shortcomings. When it is remembered that large volumes have been written especially, not only on the topic of water supplies but on the single feature of their filtration, and when the differences between authorities of eminence in the matter are remembered, it will be evident that any résumé of this kind must necessarily be incomplete and savor largely of the personal beliefs and views of the reporter.

Respectfully,

H. D. GEDDINGS,
Passed Assistant Surgeon, M. H. S., Acting Director of Laboratory.

The SURGEON-GENERAL MARINE-HOSPITAL SERVICE.

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